The Tuolumne-Calaveras Unit

Pre-Fire Management Plan
2005

Tuolumne-Calaveras Unit
2005 Pre-Fire Management Plan
September 28, 2005 Edition

Cover Photo: This was a home that was threatened by the Pattison fire in September 2004 and survived due to proper fire safe clearance of wildland vegetation around the home.

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EXECUTIVE SUMMARY

The 2005 Tuolumne-Calaveras Unit Pre-Fire Management Plan is a comprehensive plan that combines all the Unit's pre-fire components into one document. It includes: the Tuolumne-Calaveras Unit's (TCU) concept of the Pre-Fire Management Plan; a current description of TCU; a discussion of the stakeholders, fuels, weather, level of service (LOS) and assets at risk in TCU; the Unit-wide and Battalion Pre-Fire Management Plans; and a discussion of the institutional issues related to implementation of the Unit Pre-Fire Management Plan. This plan addresses how Unit staff are trying to mitigate the wildland fire hazard and ignition problem in the Unit. The 2005 Tuolumne-Calaveras Unit Pre-Fire Management Plan will serve as the CWPP for all communities in Calaveras County. TCU staff worked closely with the Calaveras Foothills Fire Safe Council in preparing this year's plan to ensure it met the local needs and desires. All of the fire districts in the county have been solicited for their input into the plan as well. Where the data was available, projects of all cooperators was incorporated into the plan.

As determined by all stakeholders in the Unit, the key priority of pre-fire management activities is to protect the communities from damage and loss due to wildfires. Other key assets identified include water supply, recreation, hydro power, timber, ranching, tourism, wine production, small and large businesses, and many more. The main tools used to achieve the goals of protecting these assets are: educate the public on how they can make their homes and property more fire safe; reduce the hazardous wildland fuels in and around the communities; determine the cause of all fires in order to find measures that can reduce the number of fire starts in each cause category; educate government officials (federal, state and local) of the wildfire hazards within their jurisdictions to make them aware of the existing hazards and the benefits of pre-fire management activities (seek leadership, funding, policy/law changes, etc.); and educate all government agencies and the public on what they can do when wildfires threaten homes and communities in the Unit.

The 2004 fire season was very destructive with slightly below average ignitions, but above average values lost. There were over $10 million in damages with 26 homes lost. There were 380 fires in the Unit in 2004 compared to the five-year average of 386. Acres burned were 7,796, which compare to a five-year average of 8,926. During the 2001 season 30,137 acres burned and only 884 acres during the 2002 season.

There were three large and damaging fires in 2004. They were the Copperopolis Fire which burned 3,444 acres and destroyed one home, the Armstrong Complex which burned 963 acres and destroyed three homes, and the Pattison Fire which burned 2,676 acres and destroyed 17 homes. The leading cause of fires during the 2004 season was vehicle use followed by arson, equipment use, and miscellaneous causes. This mirrors

the 2003 season's causes. The cause of the Copperopolis Fire and the Pattison Fire was vehicle use. The Armstrong Complex was four related roadside arson fires.

Ignition management projects in 2004 focused on reduction of equipment caused fires, reduction of fireworks related incidents during the 4th of July period, close monitoring of arson fire activity, and tighter burn permit administration. Focus of the 2005 Ignition Management Plan will primarily be a continuation of the activities initiated in 2003/2004 to deal with equipment caused fires, arson fires, 4th of July fireworks activities, and burn permit escapes and violations.

In 2004, cooperative efforts with the Fire Safe Councils, interagency groups, citizens, and federal, state and local government agencies resulted in the completion of many pre-fire management projects including: clearance of heavy vegetation along roadway corridors in both counties; creation of yard debris disposal sites in both counties; yard waste chipper programs; grants provided funding to create fire safe clearance around homes of the elderly; evacuation plan maps and fire safe brochures provided to selected Tuolumne County communities; educating the public about the hazards of using equipment in wildland areas; CDF staff and Volunteers in Prevention (VIP) were used to patrol the unit on high fire hazard days for possible arson related activities and to educate the public on the safe use of equipment during fire season; reactivation of the Highway 108 Strategic Planning Group; continued success in the SWIFT area. Grants, agency funding, Sierra Pacific Industries (SPI) and individual citizens supported this work.

In 2005, TCU will continue working with their cooperators to develop pre-fire projects in many high hazard areas in the Unit. The projects range from fuels reduction to information/education type activities. Many of these projects will involve the continuation of efforts that were undertaken in 2004 or earlier. The details of these projects are outlined in the Unit-Wide, Battalion Plan and section of this document.

CDF fire crews continue to be a great asset in completing pre-fire projects. In 2004, Baseline Conservation Camp worked 48,462 man hours, Vallecito Conservation Camp worked 65,448 man hours and Sierra Training Center worked 229,500 man hours on fuels reduction projects. These figures emphasize the importance of the Camp Program's support of Fire Plan projects and their overall benefit to the citizens of California. Without CDF fire crews, much of the manual fuel reduction worked performed by CDF would not be accomplished.

INTRODUCTION

Fire Plan Concept and Process

In 1996, the State Board of Forestry and the California Department of Forestry and Fire Protection (CDF) drafted a comprehensive update of the fire plan process for wildland fire protection in California. The planning process defines a level of service measurement, considers assets at risk, incorporates the cooperative interdependent relationships of wildland fire protection providers, provides for public stakeholder involvement, and creates a fiscal framework for policy analysis. The State Board of Forestry, being the policy maker for CDF, is responsible for reviewing, commenting on and approving processes such as the California Fire Plan.

Goal and Objectives

The overall goal of the California Fire Plan is to reduce total costs and losses from wildland fire in California by protecting assets at risk through focused pre-fire management prescriptions and increasing initial attack success. The goals of the Tuolumne-Calaveras Unit (TCU), the Battalions and the Fire Safe Councils within TCU are noted later in this document.

The California Fire Plan has five strategic objectives:

1. To create wildfire protection zones in and around key assets at risk that will reduce the risks to citizens and firefighters.

2. To assess all wildland areas, not just the state responsibility areas. The analysis will include all wildland fire service providers — federal, state, local government, and private. The analysis will identify high risk, high value areas, and develop information on and determine who is responsible, who is responding, and who is paying for wildland fire emergencies.

3. To identify and analyze key policy issues and develop recommendations for changes in public policy. Analysis will include alternatives to reduce total costs and losses by increasing fire protection system effectiveness.

4. To have a strong fiscal policy focus and monitor the wildland fire protection system in fiscal terms. This will include all public and private expenditures and economic losses.

5. The results of the analysis will be used to change public policies to afford better wildland fire protection to the citizens of California.

Fire Plan Framework

Five major components will form the basis of an ongoing fire planning process to monitor and assess California's wildland fire environment:

1. **Wildfire protection zones.** A key product of this Fire Plan is the development of wildfire safety zones in and around key assets at risk. The zones will be identified through stakeholder meetings with government agencies, private citizens and interested groups. They will be designed to reduce citizen and firefighter risks from future large wildfires.

2. **Initial attack success.** The fire plan defines an assessment process for measuring the level of service provided by the wildland fire protection system. This measure can be used to assess the department's ability to provide an equal level of protection to lands of similar type, as required by Public Resources Code 4130. This measurement is the percentage of fires that are successfully controlled before unacceptable costs are incurred. Knowledge of the level of service will help define the risk to wildfire damage faced by public and private assets in wildland areas.

3. **Assets protected.** The plan will establish a methodology for defining assets protected and their degree of risk from wildfire. The assets addressed in the plan are citizen and firefighter safety, watersheds and water, timber, wildlife and habitat (including rare and endangered species), unique areas (scenic, cultural, and historic), recreation, range, structures, air quality. Stakeholders — national, state, local, and private agencies, interest groups, etc. — will be identified for each asset at risk. The assessment will define the areas where assets are at risk from wildfire, enabling fire service managers and stakeholders to set priorities for pre-fire management project work.

4. **Pre-Fire Management.** This aspect focuses on system analysis methods that assess alternatives to protect assets from unacceptable risk of wildland fire damage. Projects include a combination of fuels reduction, ignition management, fire-safe engineering, and forest health activities to protect public and private assets. The priority for projects will be based on asset owners and other stakeholders' input and support. Pre-fire management prescriptions designed to protect these assets will also identify who benefits and who should share in the project costs.

5. **Fiscal framework.** The Board of Forestry and CDF are developing a fiscal framework for assessing and monitoring annual and long-term changes in California's wildland fire protection systems. State, local, and federal wildland fire protection agencies, along with the private sector, have evolved into an interdependent system of pre-fire management and suppression forces. As a result, budget changes that modify the level of service of any of the entities directly affects the others and the services delivered to the public. Monitoring system changes through this fiscal framework will allow the board and CDF to address public policy issues that maximize the efficiency of local, state, and federal firefighting resources.

The following are Fire Plan framework applications:

- Identify for state, federal, and local officials and for the public those areas of concentrated assets that are at high risk.

- Allow CDF to create a more efficient fire protection system focused on meaningful solutions for identified problem areas.

- Give citizens an opportunity to identify public and private assets to design and carry out projects to protect those assets.

- Identify, before fires start, where cost-effective pre-fire management investments can be made to reduce taxpayer costs and citizen losses from wildfire.

- Encourage an integrated intergovernmental approach to reducing costs and losses.

- Enable policy makers and the public to focus on what can be done to reduce future costs and losses from wildfires.

Tuolumne-Calaveras Unit Fire Plan Concept

The Fire Plan Concept in the Tuolumne-Calaveras Unit (TCU) involves a strategic and holistic approach to fire safe planning and project development. Under the "Alliance For A Fire Safe California," the Unit will work with other governmental agencies, public and private groups, and stakeholders to develop a comprehensive Fire Plan to address the fire problem within the Unit.

Past TCU fire plans were written with some non-CDF involvement, but they mainly concentrated on the CDF fire plan analysis and projects. This year's plan is being written to conform to the components required in a Community Wildfire Protection Plan (CWPP) and it will serve as the CWPP for all communities in Calaveras County. CWPP development must include the following components:

1) **Collaboration:** A CWPP must be collaboratively developed by local and state government representatives, in consultation with federal agencies and other interested parties.
2) **Prioritized Fuel Reduction:** A CWPP must identify and prioritize areas for hazardous fuel reduction treatments and recommend the types and methods of treatment that will protect one or more at-risk communities and essential infrastructure.
3) **Treatment of Structural Ignitability:** A CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures throughout the area addressed by the plan.

Tuolumne County has already adopted a more detailed CWPP for their county. The 2005 Tuolumne-Calaveras Pre-Fire Management Plan will include the Battalion analysis and projects from their plan. TCU staff will see if Tuolumne County would like to incorporate their CWPP into the TCU Unit Plan in 2006.

The fire safe councils in Tuolumne and Calaveras County play a key role in preparation and implementation of the plan. They act as the primary outreach mechanism for soliciting comments, needs and desires from the public, as well as disseminating fire safe information to the communities they serve. Over the last several years, the councils have been planning and implementing their own projects and also assisting with agency projects.

TCU staff work cooperatively with entities that provide fire and natural resource protection on Local Responsibility Areas (LRA) and Federal lands, to develop a comprehensive fire plan. CDF, local government (city and county), the United States Forest Service (USFS), the US Bureau of Land Management (BLM) and other agencies

have worked cooperatively on pre-fire projects in TCU. Although there are no Resource Conservation Districts (RCD) within Tuolumne or Calaveras Counties, the Natural Resource Conservation Service (NRCS) has formed a Resource Conservation and Development District (RC&D) that includes these counties. This offers an additional avenue to form public/private partnerships to plan and implement projects. The local RC&D is currently working with Tuolumne County staff to form an RCD in Tuolumne County. The RC& D coordinator would begin the process to form an RCD in Calaveras County if interested groups would support its development.

Coordination of the efforts of the agencies and fire safe councils will take place at the meetings of several interagency groups and the three fire safe councils that exist within the Unit. For a detailed description of the councils see the Stakeholder Process-Fire Safe Council section of this document. Within the Fire Safe Council framework, members (agencies, groups, citizens, etc.) can work together with the Board of Supervisors and local fire districts to develop fire safe measures, plans and projects within their respective counties.

Existing programs and treatment methods will be used to implement the projects that are developed through the fire plan process. One of the most commonly used programs will be CDF's Vegetation Management Program (VMP). The VMP Program allows CDF to enter into agreements with landowners (private or federal, state, local govt.) to assist them in performing fuel modification projects such as prescribed burns, manual or mechanical brush clearing, biomass reduction, and fuel break construction. CDF's defensible space inspections will be used to ensure that property owners have adequate clearance of flammable vegetation around their structures. This program will help reduce the structure ignitability of homes and businesses in the area. Timber harvesting of over-dense forest stands will be encouraged to reduce the fuel build-up, which leads to large, catastrophic wildfires. Demonstrations of the above projects will be used to educate the public on their importance in creating a fire safe environment in and around their communities and homes.

CDF was able to get funding for use on fuel reduction projects through California's Proposition 40 (Prop 40), the clean water initiative. Fire safe councils and other local government entities can tap into these funds to use for their fire safe projects by submitting applications on the State Fire Safe Council Grant Clearinghouse web site. Private landowners can also apply for funding to improve their forest covered land through CDF's California Forest Improvement Program (CFIP). Through CFIP, CDF can enter into agreements with small forest land owners (less than 5,000 acres) where CDF provides 75% to 90% of the funding to perform forest improvement work on cooperators' land. This work can include thinning, site preparation for planting trees, fuel reduction work and many other forest improvement efforts. The VMP Program will also be used to implement Prop 40 projects.

For an area in which a Fire Plan Project is proposed, the first objective is to isolate the assets at risk, while the second objective is to mitigate the condition that is the agent causing the risk. This can be accomplished in a single project or a series of projects over time.

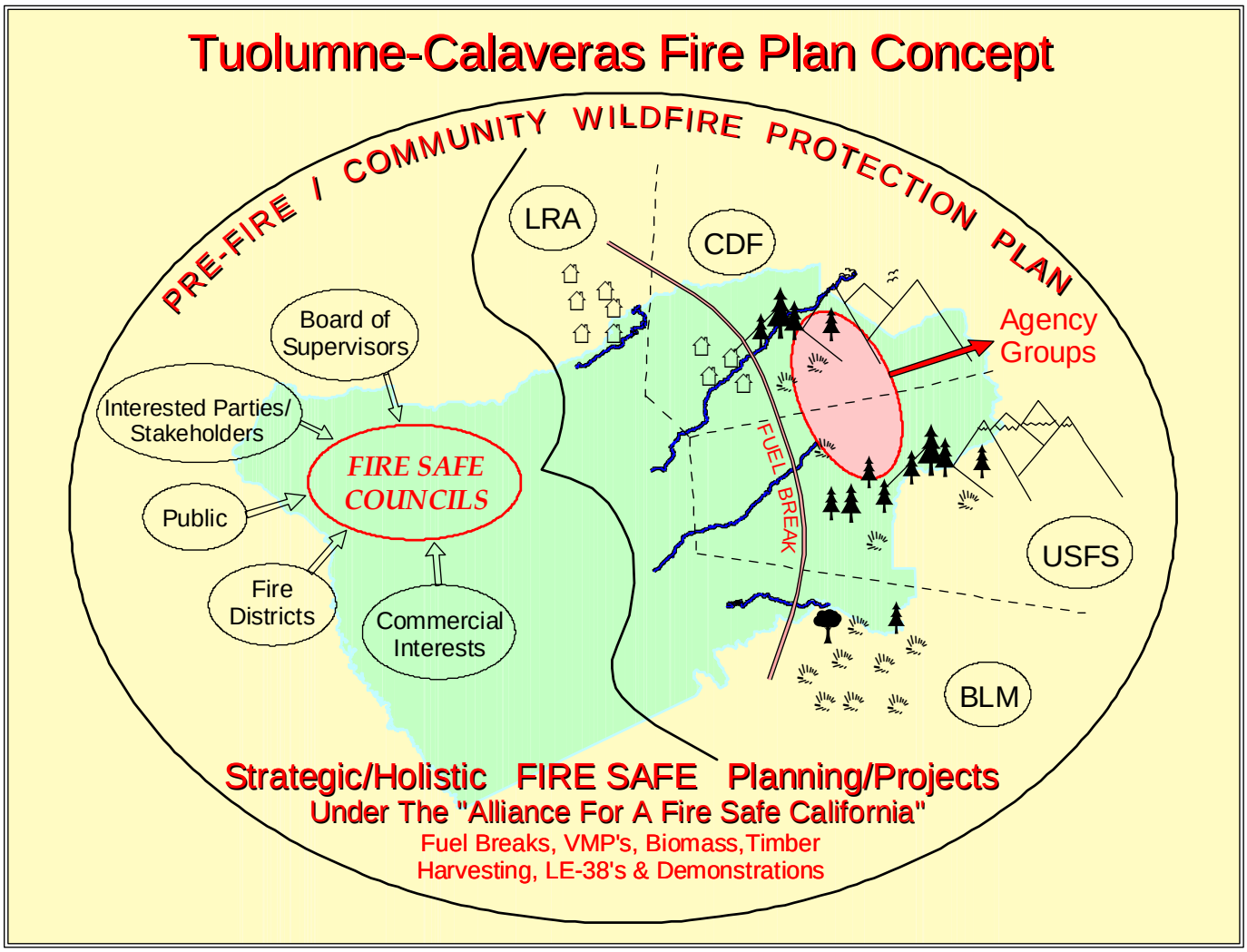

Figure 1: Tuolumne-Calaveras Fire Plan Concept

Establishment of fuel breaks and/or fire safe communities (PRC 4290 and 4291) will be the first step to isolate assets at risk from adjacent hazardous wildland vegetation (fuels). Once those are established, they will be used as an anchor point for fuel modification efforts for the adjoining areas through manual and mechanical treatments, prescribed burning and timber harvesting. Utilizing these measures, the objective is to be able to confine future wildfires to the watershed drainage of origin that is bounded by the fuel breaks. The Fire Plan process will be utilized for the maintenance of the established fuel breaks.

All of these measures will enable multiple agencies and private citizens to become involved in planning and implementing fire safe projects. By involving other agencies and the general public, jurisdictional boundaries will no longer stall implementation of strategic projects.

Tuolumne-Calaveras Unit Description

Geographic

The Tuolumne-Calaveras Unit is located in Central California. It includes all of Tuolumne County except those portions within Yosemite National Park, Calaveras County and the eastern portions of San Joaquin and Stanislaus Counties. The entire Unit encompasses 2,869,021 acres. Tuolumne, Calaveras, San Joaquin and Stanislaus Counties cover 1,030,812, 663,000, 596,396 and 578,813 acres respectively within TCU. There are approximately 1,173,320 acres of State Responsibility Area (SRA) lands within this area. SRA is defined as forest, brush or grass covered lands where CDF is responsible for wildland fire protection. SRA is mainly composed of state and private land holdings. The lands outside the SRA are either federally owned (FRA), within an incorporated city or are areas that don't meet the criteria to be considered SRA. Lands that are neither SRA nor FRA are considered LRA (Local Responsibility Area) and wildland fire protection is borne upon a local government entity (city, county, fire district, etc.).

Land owners of both SRA and NON-SRA lands within the Unit include: United States Forest Service (USFS-690,017 acres); Bureau of Land Management (BLM-82,190 acres); US Fish and Wildlife Service (USFWS-10,279 acres); Bureau of Indian Affairs (BIA-356 acres); Military (24,207 acres); State of California (16,443 acres); and private (2,040,346 acres).

There are three major watersheds in the Unit, the Mokelumne, Stanislaus and Tuolumne Rivers. Numerous water and power utilities make use of the resources of these rivers and their tributaries as well as the agriculture industry within the Unit.

There are 5 east-west state highways in the Unit: 12, 26 and 4 in Calaveras County; 108 and 120 in Tuolumne County. State Highways 49, 99 and Interstate 5 are the only north-south highways in the Unit. The majority of the towns and population in the area exist on or near these major transportation corridors.

Socioeconomic

The approximate population within the CDF Direct Protection Area (DPA) in TCU is 103,500. In 2004, the US census Bureau reported an estimated population of 45,939 in Calaveras County and 56,962 in Tuolumne County. Almost the entire population within these counties is in the CDF DPA. The DPA in San Joaquin and Stanislaus Counties is less dense and only provides a minor contribution to the population in the CDF DPA.

In Tuolumne County, the highest population density is found on the Highway 108 corridor from Jamestown to Twain Harte. The Groveland and Lake Don Pedro areas also have a high population density. Higher population densities in Calaveras County are

more scattered with the greatest densities in the upper Highway 4 corridor from Murphys to Big Trees Village, from Valley Springs to Jenny Lind, and in the Copperopolis area. Other areas of more dense population exist in Angels Camp, San Andreas, Mokelumne Hill, Mountain Ranch and West Point.

The population within the Unit increases significantly during the fire season for several reasons. Many vacation homes exist within the Unit that are used more frequently at this time of the year. This area has many recreational opportunities, which draw people from all over the state and country. Seasonal workers come to this area in search of summer jobs, thus increasing the resident population. Since the majority of fires are human caused, this increase in population usually results in more wildland fire ignitions.

The major industries that support the local economy include tourism, viticulture, timber, cattle, recreation and construction. A variety of other small businesses exist to support the needs of the populace and contribute significantly to the local economy. All of these industries have been affected at one time or another when wildfires have burned in the Unit. Hundreds of thousands of dollars have been lost both directly and indirectly due to these fires.

Fire Environment

The fire environment in the Tuolumne-Calaveras Unit is conducive to large, damaging fires as shown by the major fire history map. Over 38% of the CDF DPA lands are covered with high hazard fuels (brush and timber). The topography contains many steep canyons, which, in some cases, are inaccessible. Fighting fires with bulldozers is difficult, if not impossible, in much of the Unit due to this rugged terrain. Severe fire weather occurs on 35% of the days during the fire season in much of the Unit. This, coupled with the rugged terrain and the high hazard fuels, increases the probability that large damaging fires will occur on a regular basis.

CDF Facilities and Resources

The Tuolumne-Calaveras Unit manages 15 CDF fire stations, the Tuolumne County Fire Department, 2 conservation camps, 1 conservation camp training center, an air attack base and a helitack base. During peak fire season, TCU staffs 21 Schedule "B" engines, 10 fire crews, 2 bulldozers, 1 air attack, 2 air tankers, 1 helicopter, and 1 Tuolumne County Schedule "A" engine. Schedule "B" equipment are those resources that are directly funded by state dollars to protect SRA lands. Schedule "A" equipment is owned by a local government entity, but through a contract the entity pays for CDF personnel to staff the equipment. In addition to dispatching CDF resources, TCU's Emergency Command Center (ECC) handles dispatching for all of the local fire departments in Tuolumne and Calaveras Counties and the Bear Valley Fire Department in Alpine County. The ECC handled over 10,800 calls in 2004.

Fire Protection Responsibilities

To reduce fire protection costs, the CDF and Federal wildland fire protection agencies have entered into various agreements that define Direct Protection Areas (DPA) for each agency. The DPA for an agency is the geographic area where that particular agency is responsible for providing wildland fire protection, regardless of land ownership within the area. As an example, a chunk of private land (SRA) well within the national forest boundary (FRA) may be protected by the USFS (USFS DPA) due to the close proximity of a USFS fire station. The same goes for isolated USFS land (FRA) surrounded by private land (SRA), which may be protected by CDF (CDF DPA) since it is surrounded by CDF DPA. On a statewide basis, CDF and the federal agencies attempt to balance the acreage of these trade-offs between each set of agencies so that no single agency is protecting more of the other agencies' land than the reciprocating agency. This process is termed the "Balancing of Acres."

The CDF DPA in TCU covers 1,253,551 acres from the foothills of eastern San Joaquin and Stanislaus Counties to above 6000 feet in elevation in the Central Sierra Nevada mountain range. The CDF DPA in Tuolumne, Calaveras, San Joaquin and Stanislaus Counties covers 386,316, 623,621, 64,437 and 179,174 acres respectively in each county. Through the balancing of acres agreements, the Tuolumne-Calaveras Unit provides direct wildland fire protection on lands owned by the USFS (73,487 acres), BLM (82,023 acres), BIA (356 acres), and Military (23,157 acres). Conversely, the USFS and BLM provide wildland fire protection on 89,211 and 19,912 acres respectively of CDF SRA lands within the Unit.

Besides CDF, the USFS has wildland fire protection responsibilities on 678,853 acres within the Unit. Although county and local government fire departments do not have a statutory wildland fire protection responsibility, they do respond to wildfires with their equipment to assist CDF and USFS firefighting resources.

TCU is administered by the Unit Chief whose headquarters is co-located with the San Andreas Forest Firefighting Station (FFS). TCU DPA is divided into North and South Divisions, each of which is managed by a CDF Division (aka Assistant) Chief. The North Division is essentially in Calaveras County except for the area north of the Middle Fork Stanislaus River in Tuolumne County, which is more accessible from Calaveras County. Eastern San Joaquin and a small section of northeastern Stanislaus County are also in this division. The South Division includes the remainder of Tuolumne County and Eastern Stanislaus County. The Tuolumne County Fire Department is also administered by the South Division Chief through a contract between Tuolumne County and CDF.

The North Division is divided into four sub-areas called Battalions, each of which is administered by a CDF Battalion Chief. Battalion 11 covers from Mokelumne Hill to Wallace on the north, and from Jenny Lind to San Andreas on the south. The Valley

Springs and San Andreas FFS's are within this Battalion. Battalion 12 covers the lower Highway 4 corridor from Eastern Stanislaus County to Murphys. The Copperopolis, Altaville and Murphys FFS's are administered by this Battalion Chief. Battalion 13 is the upper Highway 26 area and includes the communities of Glencoe, West Point, Wilseyville, Railroad Flat and Mountain Ranch. This Battalion includes the West Point, Esperanza (near Mountain Ranch) and Hermit Springs FFS's. Battalion 14 is the upper Highway 4 area from Forest Meadows to Black Springs Road and also the area in Tuolumne County north of the Middle Fork Stanislaus River. Arnold FFS, Skull Creek FFS and Blue Mountain Lookout are within this Battalion. Vallecito Conservation Camp, the main office for the North Division Chief, is also in the North Division.

The South Division Chief oversees the Tuolumne County Fire Department and CDF operations in Battalions 15 and 16 in the South Division, as well as at the Columbia Air Attack Base. Battalion 15 covers the upper Highway 108 corridor from Jamestown to Long Barn and includes the Sonora and Twain Harte FFS's. Battalion 16 includes the Highway 120 and 132 areas in the Unit and the Groveland, Green Springs and Blanchard FFS's. Baseline Conservation Camp and Sierra Conservation Center are also in the South Division.

In TCU there are eleven fire districts in Calaveras County and eight in Tuolumne County. These districts are primarily responsible for structural fire protection (residential, commercial, public, etc. buildings) within their jurisdictions and also respond to wildland fire, medical, public assist, hazardous material and a variety of other emergency calls. As noted above, CDF relies heavily on district equipment to supplement CDF equipment on wildland fires. CDF reciprocates this system of mutual aid by responding to all emergency calls within the districts, if they so desire this service while CDF equipment is staffed during fire season. The closest equipment, whether CDF or fire district, is dispatched to each emergency incident in the Unit.

The fire districts in Calaveras County include: West Point; Mokelumne Hill; Foothill; Jenny Lind; San Andreas; Central; Copperopolis; Altaville-Melones; Angels Camp; Murphys; and Ebbetts Pass. The district boundaries combine to cover the entire county except three geographic areas that chose to be excluded from the districts. These areas are as follows: Area 1 – west county area between the Jenny Lind and Copperopolis Fire Districts; Area 2 – Old Gulch Road area south of San Andreas; and Area 3 – the greater Sheep Ranch area. These areas later negotiated with adjacent districts to provide their fire protection. The district boundaries cover the areas of the communities that they are named after and then some. The Foothill Fire District includes the Highway 12 corridor from Valley Springs to Wallace. The Central Fire District covers the Mountain Ranch, Railroad Flat areas.

The fire districts in Tuolumne County include: Columbia; Jamestown; Sonora City; Tuolumne; Twain Harte; Mi-Wuk; Strawberry and Groveland Community Services District. Most of the district boundaries incorporate the general area of the community that they are named after. Areas in Tuolumne County outside of the fire districts are protected by the Tuolumne County Fire Department, which is administered by CDF

through a contract with the county. All of the Tuolumne County fire stations are staffed by volunteer firefighters except the Mono Village Station. This station is staffed with a minimum of two full time CDF personnel 24 hours a day, 7 days a week (24/7). Jamestown Fire District has contracted with CDF to provide one CDF Fire Captain to perform the administration duties for the department.

Once fire season ends each year, CDF enters into a contract with Tuolumne County to continue staffing CDF fire engines with CDF personnel at Twain Harte, Sonora and Blanchard CDF Firefighting Stations. The CDF equipment responds to emergency calls in Tuolumne County through the fall, winter and spring until regular CDF staffing occurs again when fire season begins in the spring. This process originated in Amador County and has been termed and "Amador Plan" agreement. Many counties throughout California rely on this service to provide fire protection when not in fire season. In the past, Calaveras County has taken advantage of this service, but currently there are no active contracts.

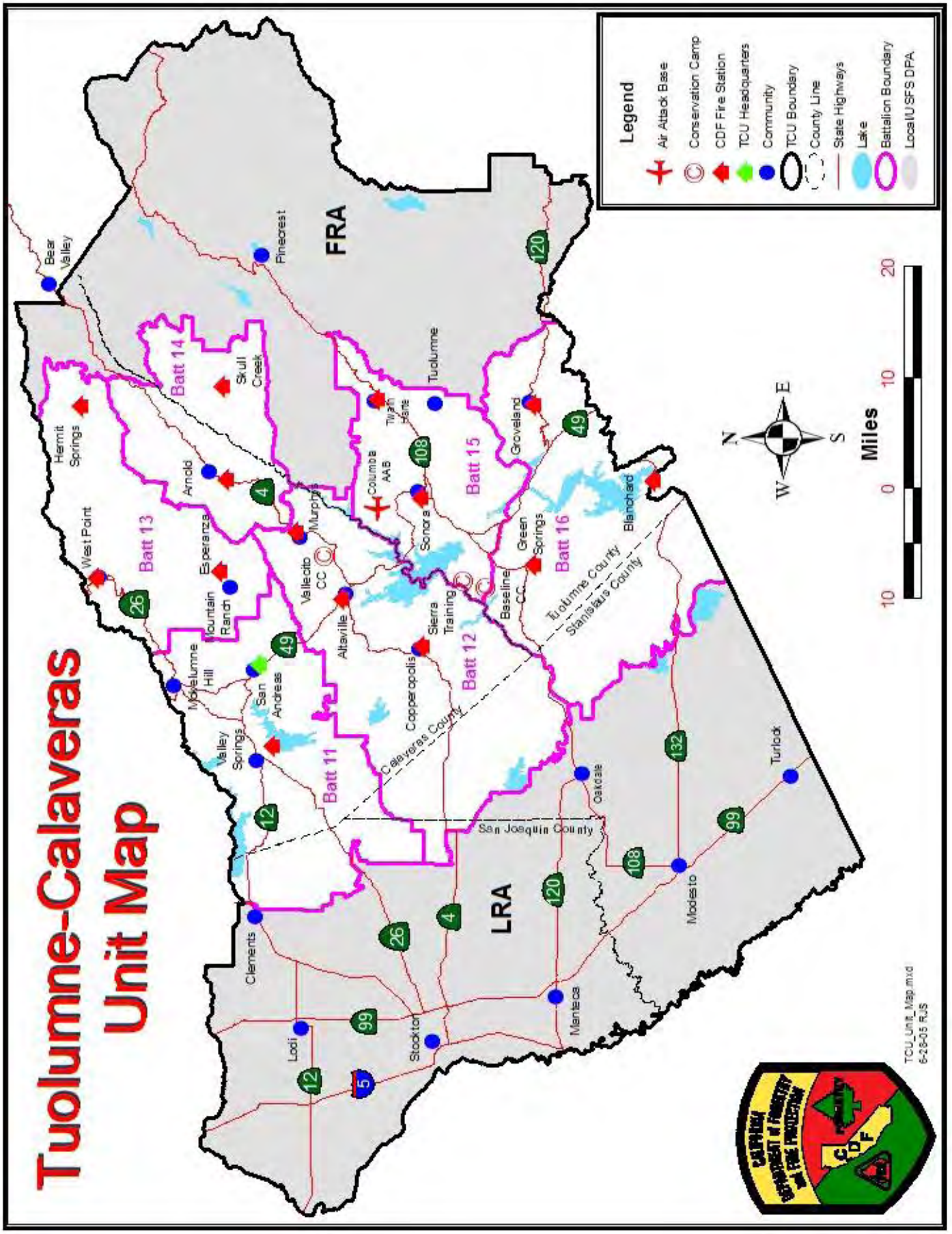

Figure 2: Tuolumne-Calaveras Unit Map

STAKEHOLDER PROCESS-FIRE SAFE COUNCIL

The Tuolumne-Calaveras Fire Safe Council was formed in the mid 1990's and was the main stakeholder group used by TCU to collect and disseminate information vital to the Unit fire plan. This group's membership included people from government, industry, special interest groups and private individuals that were interested in promoting the fire safe message. Interest and participation in this council slowly declined in the late 1990's and TCU pre-fire management staff began seeking a way to revitalize the group. It was determined that the unit-wide council covered too large an area to focus on local issues and that forming several smaller councils would probably result in more active, productive, independent councils.

In 2001 TCU applied for and received a National Fire Plan Forest Service Dependent Rural Communities Grant from the Stanislaus National Forest to form four new fire safe councils, one on each of the four major east-west highway corridors in the Unit. The goal of this grant was for CDF to contract with a consultant who would coordinate the formation of the new fire safe councils. Mark Valle, of Corporate Visions, was awarded the contract in the fall of 2002 and the first meetings of the four councils were held in November. The Calaveras Foothills (Northern Calaveras County area), Sierra-Highway-4 (Southern Calaveras County area), Highway 108 (Northern Tuolumne County) and Yosemite Foothills (Southern Tuolumne County) Fire Safe Councils formed after the first meeting.
Upon completion of the Grant with Mark Valle on September 30, 2003, the Calaveras Foothills and Sierra Highway 4 Fire Safe Councils continued under volunteer members and an Executive Board without a coordinator. The two Councils shared information but duplicate services and competed for funding within the County. In December of 2003, a decision was made to merge the two Councils to avoid duplication and a decline in volunteer participation. The joint Boards voted to merge under the Calaveras Foothills Fire Safe Council articles of incorporation and place the Sierra Highway 4 Fire Safe Council on an inactive status. The Calaveras Foothills now serves all of Calaveras County and the western portion of Alpine County.

The three fire safe councils are now becoming more active in developing fire safe plans, projects and educational activities within their geographic areas. Working cooperatively with these councils to identify, plan and implement projects is an important aspect of the TCU Pre-Fire Management Plan. Stakeholders in the fire safe councils also play an important part in validating fire plan data in their particular areas of experience and expertise.

Key issues that are important to the 3 councils in TCU include:

- Educate the public about the fire threat and the fire-safe measures.
- Reducing the fuel hazards that exist around their homes and communities.
- Recycle or burn yard debris to lessen landfill impacts.
- Develop Creative ways to make compliance with fire-safe regulations easier and more effective for property owners.
- Maintain an open communication line with and be the link between the general public and fire protection agencies.
- Be an active partner in creating comprehensive fire plans for the council's area of influence.

- Build community support for gaining additional funding, programs, and equipment in order to meet fire suppression and prevention needs in the local region.
- Monitor and support programs to ensure that the minimum legal requirements for preventative clearance and fire safety are met every year on all private properties, timberlands, and public lands within the council's area of influence.

The members of the original Tuolumne-Calaveras Fire Safe Council were very helpful in assessing the assets at risk in TCU. Water, power, county and local government agencies, private citizens, and many others provided valuable information to TCU pre-fire management staff. This combined Pre-Fire Management Plan/Community Wildfire Protection Plan has utilized Fire Safe Council member's expertise and input. Public participation in the Plan was obtained through a series of public meetings where comments and concerns could be voiced by citizens in Calaveras County, the US Forest Service area, and Western Alpine County.

The Calaveras Foothill FSC has taken several steps to maintain operations and improve wildfire safety in Calaveras and western Alpine Counties. Funding from Calaveras County is responsible for the Councils' continued operation. However, the FSC continues to have difficulty finding committed volunteers that will spend their time and talents to sustain the Council and develop the necessary plans and fund and implement projects in order to show improvements.

FUELS, WEATHER, LEVEL OF SERVICE & ASSETS AT RISK

As part of the fire plan process, the fuels, assets at risk, past fire weather history and the level of service that CDF has provided to the public will be analyzed. Data for these four components has been compiled by staff in CDF's Fire and Resource Assessment Program (FRAP) in Sacramento. The initial fire plan analysis will only be performed on CDF DPA lands. From this point on in this document, the acronym DPA will refer to CDF DPA, unless otherwise noted. Through a cooperative planning effort with other agencies that are responsible for wildland fire protection on non DPA land, CDF would like to include all lands in the Unit in future data analysis.

To arrive at a common land area unit to assemble and analyze this data, US Geological Survey 7.5 minute quadrangle maps were divided by a 9x9 grid, forming 81 equal area blocks of land. Each block contains approximately 450 acres and has been named a quad 81st. The data for the entire Unit has been aggregated down to the quad 81st.

Fuels are the burnable vegetation that exist within the Unit. Assets at risk refer to anything of value as determined by the local stakeholders that has the potential to be burned or damaged when a wildfire burns in an area. Seventeen assets have been identified by CDF's Fire and Resource Assessment Program (FRAP) and will be ranked as to their risk from wildfire. The past fire weather history will be analyzed and the percentage of days, during the fire season, that severe fire weather is experienced by each quad 81st will be calculated. The level of service is a measure of how successful CDF is at controlling fires during the initial attack stages of a fire. Initial attack is defined as the wildfire control efforts taken by firefighters that are first to arrive at a wildfire. The number of fires that are controlled during the initial attack stage of a fire (successful initial attacks) divided by the total number of initial attacks will equal the level of service provided by CDF for the time period analyzed.

Fuels

Wildland fuels or vegetation are the basic catalyst that support the combustion process of wildfires. The various fuels found in California have specific characteristics, which allow fire behavior analysts to categorize them based upon how they burn. The Fire Behavior Prediction System (FBPS) was the method chosen for categorizing fuels for the fire plan process. This method classifies fuels into 13 basic fuel models, each of which has specific physical and burning characteristics. The models include 3 grass, 4 brush, 3 timber and 3 slash fuel types. The fire plan has labeled fuel model #2, a grass model, as a woodland fuel. The woodland fuel model is primarily an area covered with annual grass with scattered trees that provide some shading to the grass. The overall fuel modeling system also allows the creation of custom fuel models when none of the 13 models adequately represent the fuels that are found in an area. Custom fuel models were developed for plantation/burned areas, water, rock/barren and urban areas.

The fuels models will be used to label the current and historic fuels in the Unit. The current fuels are those fuels that presently exist in TCU. The historic fuels are the climax fuel models or those that existed prior to fire occurrence or other activities in the area. Past wildfires, land management activities, Vegetation Management Program (VMP) burns and other occurrences have modified these fuels to their current condition. The Unit was assessed to determine the historic fuels that existed prior to the activities noted above.

The historic fuel models will be used to label the four CDF planning belts found in the Tuolumne-Calaveras Unit. Planning belts are the general fuel categories of grass, brush, woodland or conifer that are used to group the basic fuel models into similar fuel types. These general types are then used to classify lands throughout the state based on their vegetative cover, which is used in the CDF Level of Service analysis discussed later in this document.

The fuel hazard rank is used to define the wildland fire hazard presented by the current fuels when other factors are taken into consideration. The current fuel model, slope class, a ladder fuel and crown closure component, and a difficulty of control rating will be used to derive the fuel hazard rank for each quad 81st. CDF staff in Sacramento determined that there are realistically no low hazard fuels in California, thus the fuels will be ranked medium, high or very high. FRAP has assigned a medium ranking to fuel model #1 (grass) on slopes of 10% or less and high on slopes greater than 10%. Fuel model #2 (woodland) is ranked high on slopes of 40% or less and very high on slopes greater than 40%. Fuel model #6 (brush/hardwood) is ranked high on slopes of 75% or less and very high on slopes greater than 75%. Fuel models #4 (brush) and #10 (timber) are ranked very high regardless of the slope.

TCU Pre-Fire Management staff completed the Unit fuels validation in 1997. Since then, there have been several major wildfires and enough manmade disturbances to local vegetation that a reassessment is necessary. It is anticipated that the reassessment will occur over the next 2 years as time and personnel are available to work on the project. In 2002, CDF was a member of an interagency group that contracted with a vendor to collect new color digital orthophoto data for Calaveras County. The 2 foot resolution digital imagery will be very useful when the fuels are re-evaluated.

TCU Current Fuels

Referring to the current fuel model map; 45% of the quad 81st's in the DPA were labeled as grass, 19% woodland, 8% brush, 7% brush/hardwood, and 21% timber. The majority of the grass model exists west of State Highway 49 in the lower foothills, and to the east of the highway, the grass model is limited above 2,500 feet in elevation. The woodland areas are scattered from 800 to 4000 feet in elevation, some of which are in large blocks.

The brush model (#4) exists in larger blocks in the 800 to 4000 foot elevation. The blocks are in some of the less inhabited areas of Tuolumne and Calaveras Counties. The Pardee Reservoir, New Hogan Lake, Bear Mountain, Red Hills, Lake Don Pedro,

Moccasin and New Melones Lake areas have the largest concentrations of brush. There are also large blocks of brush north of San Andreas, south and east of Railroad Flat, south of Mountain Ranch, the Tuolumne River canyon south of Tuolumne City, and Highway 49 south of Moccasin.

Fuel model #6, the brush/hardwood model, was used to label those areas that have a mixture of live oak, black oak, manzanita, and chamise. This fuel type has a closed overstory (tree canopy) with light grass or leaf litter on the ground. Manzanita and chamise make up less than 15% of the fuel cover. The majority of this fuel type is between 1000 to 4000 feet in elevation. In Calaveras County, there are large blocks of this fuel model located east of Highway 49. A large block extends from New Melones Reservoir near Parrots Ferry, up the South Fork of the Stanislaus River approximately 5 miles, and then over Big Hill to the Cedar Ridge area. South of this area, there are scattered areas consisting of 2 to 4 Quad 81st cells.

Except for scattered blocks between Mountain Ranch and West Point, and a large block east of Groveland, the timber fuel model (#10) is primarily above 3500 feet in elevation. In the DPA, approximately 140,000 acres of this model are Sierra Pacific Industries (SPI) timberland. The remaining areas are made up of USFS, BLM, CDPR and other government and private ownership. Timber fuel models #8 and #9 are scattered throughout the unit. These models are less hazardous than fuel model #10, which consists of larger, denser dead fuels on the ground.

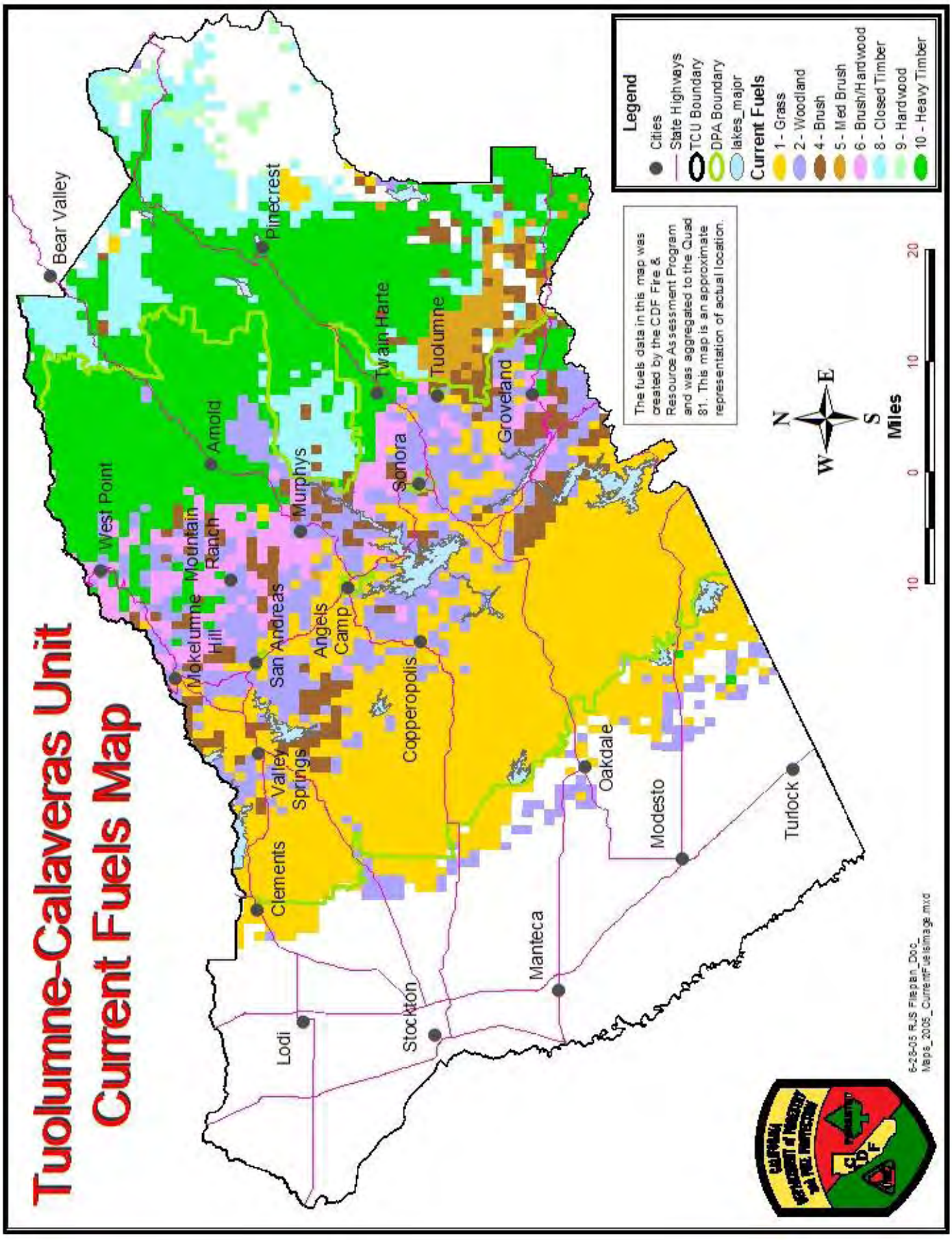

Figure 3: Current Fuels Map

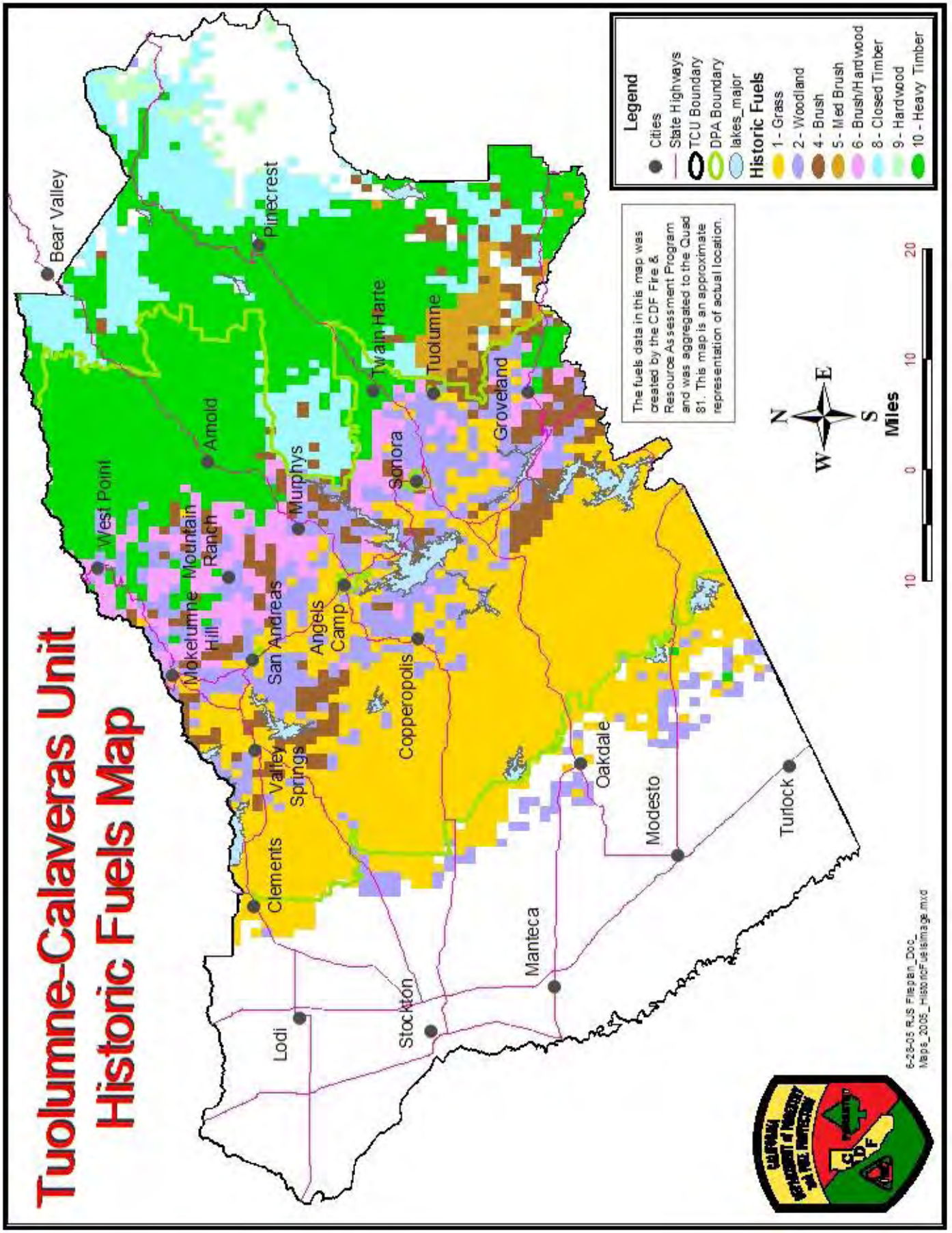

Figure 4: Historic Fuels Map

Historic Fuels and Planning Belts

In the DPA, with the exception of several areas, the current fuels are very similar to the historic fuels. Most of the fuels in burn areas have reverted to their historic state or close enough to classify them as such. Some quad 81st's within the Railroad Flat Complex (July 1988), the Gulch Fire and the Moccasin Fire (August 1992) areas have not reverted back to their historic fuel models.

The historic fuels were the basis for assigning planning belts to each quad 81st. The table below shows the fuel models assigned to and the percentage of the DPA covered by each planning belt.

Planning Belt	Historic Fuel Model(s)	% of DPA
Grass	1 and 3	44
Woodland	2	18
Brush	4, 5, 6 and 7	17
Conifer	8, 9 and 10	21

Table 1: TCU Fuels by Planning Belt

Except for the woodland planning belt, all of the others include two or more fuel models. In the DPA, there are more areas shaded in brown on the planning belt map compared to that of the historic fuels map because fuel models #4 and #6 are combined to form the brush planning belt. Fuel model #10 was used to classify all the conifer type areas in the DPA, so the conifer planning belt in the DPA is exactly the same as the area covered by fuel model #10 in the historic fuel map.

Fuel Hazard Rank

In the DPA, 25% of the quad 81st's were ranked medium, 45% high and 30% very high. This shows that over three-quarters of the CDF direct protection area contains high hazard fuels.

The fuel rank for each quad 81st is directly related to its assigned current fuel model. All cells labeled with fuel models #4 and # 10 were ranked very high and represent a total of 29% of the DPA. Those consisting of fuel model #6 (8%) were all ranked high. Because higher slopes can increase their fuel rank, it was necessary to take the slope into consideration in Quad 81st's with fuel models #1 and #2. The grass model (#1) covered 44% of the DPA, of which the number of cells were divided equally between medium and high ranks. Fuel model #2 (18%) was divided into 90% high and 10% very high ranks.

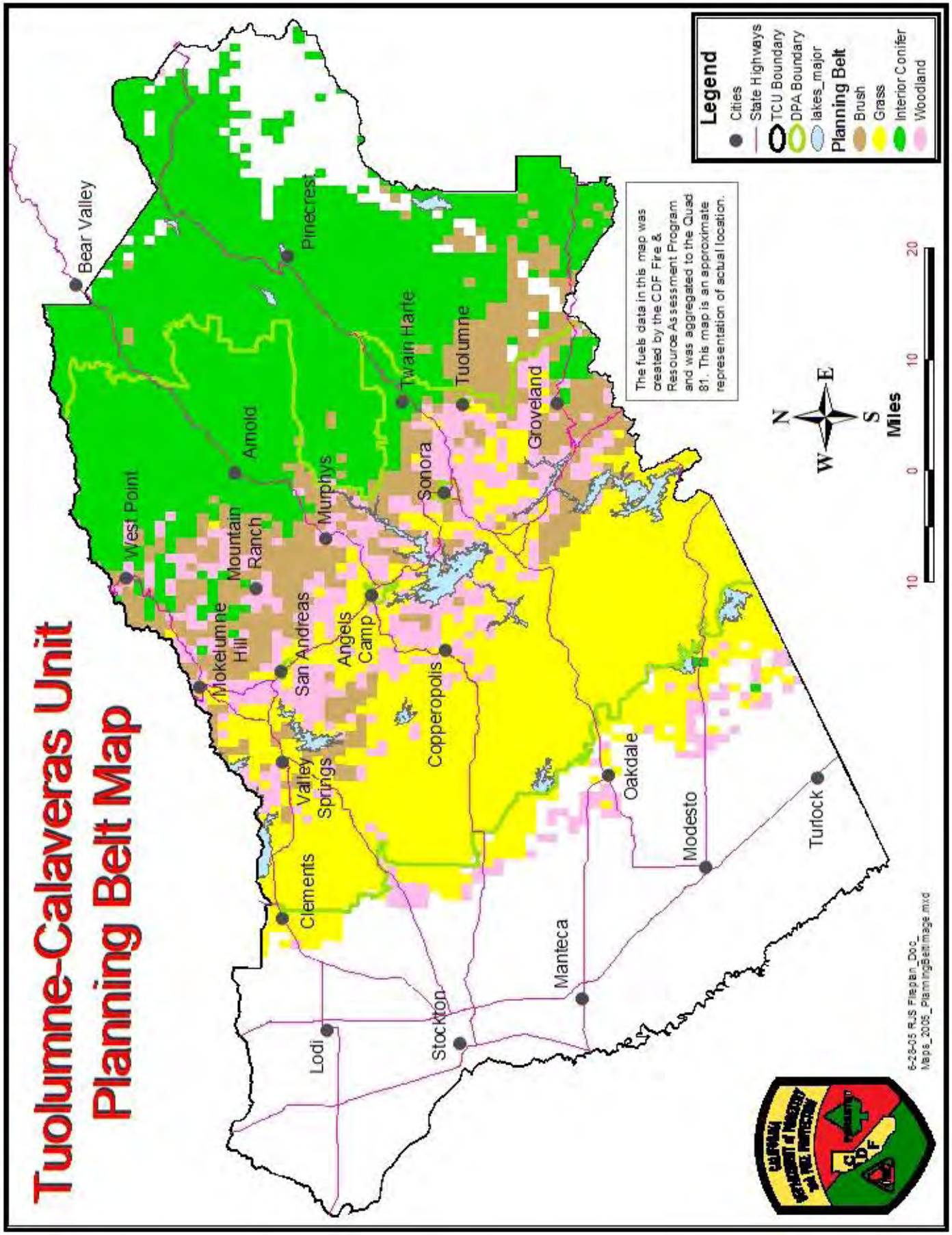

Figure 5: Planning Belt Map

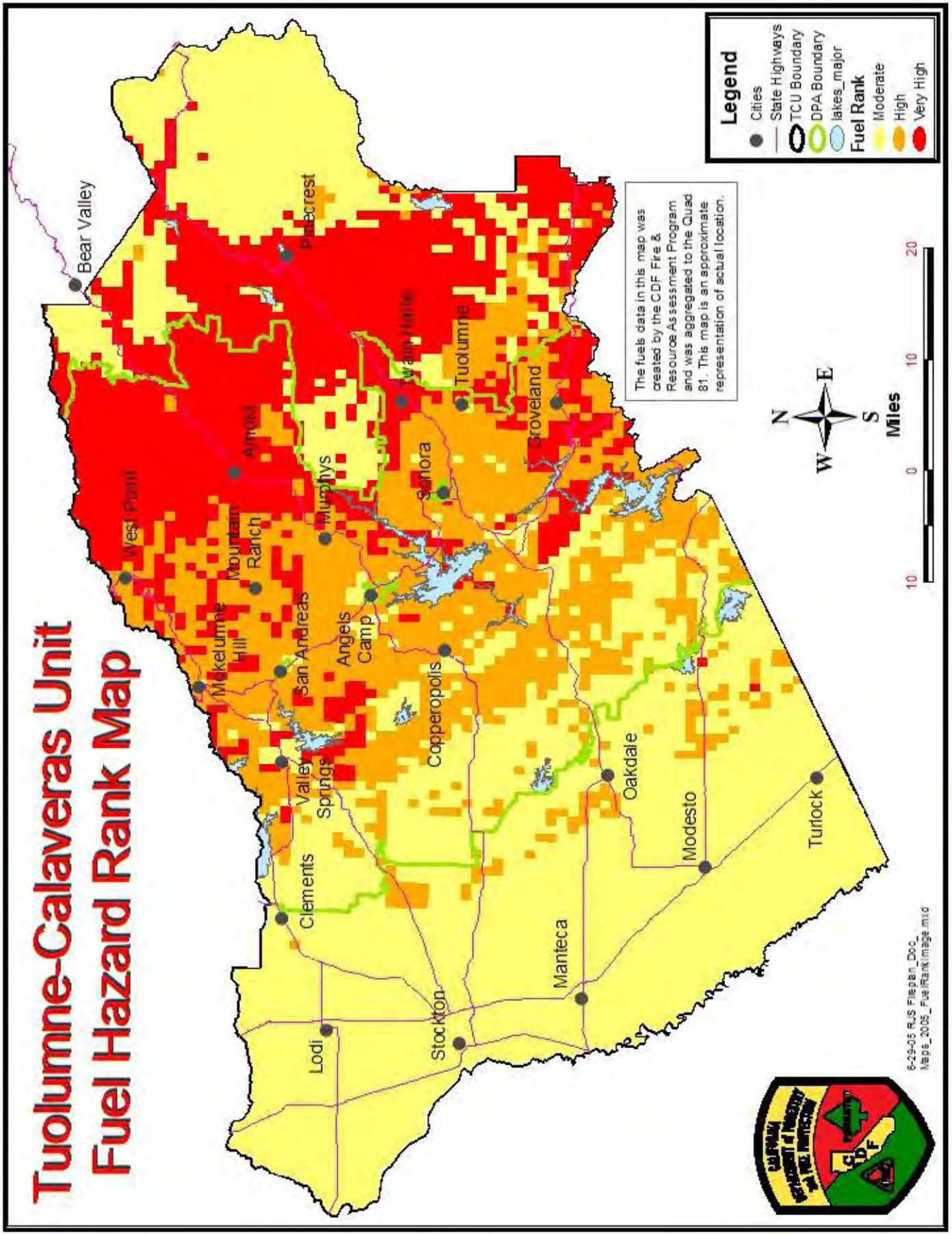

Figure 6: Fuel Hazard Rank Map

Weather

Fire weather is one of the most important factors to consider in a study of wildland fire history and potential for a given area. In the fire plan, past weather data will be used to calculate the Level of Service (LOS), assign a severe fire weather ranking to each quad 81st, and run the California Fire Economics Simulator, Version 2 (CFES2). In order to perform these operations, it will be necessary to gather past weather records from local weather stations that cover different areas within the Unit. Each quad 81st will be assigned a weather station from which data will be collected. Prior to 1991, the CDF Remote Automated Weather Stations (RAWS) maintained incomplete data due to malfunctions and other equipment problems. During this period and any other time that data is not available, the weather data will come from other weather stations that cover similar areas outside the Unit.

The weather data will be used in several ways in the fire plan analysis. In the LOS analysis, it is used to calculate the Burn Index (BI) and Energy Release Component (ERC) to determine the fire intensity for each fire ignition that occurred during the analysis period. From these components and other ignition information, the fire will be categorized as a successful or unsuccessful initial attack. This software will also calculate the severe fire weather rank (high, medium or low), for each quad 81st, based on the weather data, slope and other quad 81st attributes. In CFES2, the historic weather data will be used to project fire indices (BI, ERC, Rate of Spread (ROS)) to be used in simulating wildland fires in the future. This information will then be used to analyze how changes in fire suppression forces will affect the Unit's level of service.

Weather Station Coverage

Ten weather stations were used to provide weather coverage in the Tuolumne-Calaveras Unit. The Green Springs weather station covers the low elevation areas below 1000 feet. The Esperanza station covers from 1000 to 3500 feet in the north and central portions of the Unit. It also covers southern Tuolumne County between 1000 and 2000 feet in elevation. The Buck Meadows (USFS) station covers 2000 to 4800 feet in southern Tuolumne County. The West Point and Railroad Flat areas are covered by the Mount Zion station. Most of the Unit between the elevations of 3500 to 6000 feet is represented by weather data from Beaver (USFS) on the north end of the Unit and Mount Elizabeth (USFS) on the south. The Pinecrest station (USFS) covers areas between 5,000 to 6,000 feet in the east-central area of the Unit. The 6,000 to 7,200 foot elevation areas are covered by the Crane Flat (YNP) weather station. The White Wolf (YNP) services the elevations between 7,200 and 8,600 feet. The Tuolumne Meadows (USFS) weather station covers from 8,600 feet to just east of the Sierra crest.

Weather Rank

The process for deriving the weather rank is currently being reassessed and modified. This section will be added to the fire plan once a new method is developed and implemented.

Level of Service

A primary California Board of Forestry responsibility is set forth in Public Resources Code Section 4130, which dictates the following:

1. Directs the Board to classify all wildland within State Responsibility Areas (SRA) based on cover, beneficial water uses, probable erosion damage and fire risks and hazards.
2. Determine the intensity of protection to be given to each type of wildland.
3. Prepare a fire plan to assure adequate statewide fire protection so that lands of each type are assigned the same intensity of protection.

The Level of Service (LOS) analysis will assess how successful CDF has been in providing equal fire protection to similar lands across the state. In addition, it will show where this goal is not being achieved and improvement is needed. For the purposes of the LOS analysis, CDF is using planning belts to classify similar wildland areas throughout the state. The brush, grass, woodland and interior conifer (timber) planning belts exist and will be used to analyze the LOS within the Tuolumne/Calaveras Unit.

Software to perform the LOS analysis was developed by staff at CDF's Information Technology and Fire and Resource Assessment Program offices in Sacramento. This software measures CDF's effectiveness in controlling wildfires during the initial attack (IA) stage of a wildland fire, before unacceptable costs and losses occur. GIS data containing the location of each wildland fire ignition for a given period is examined by the software and each ignition is classified as being either a successful or unsuccessful IA. The ignition data is derived from the Emergency Activity Reporting System (EARS) database where all fire ignitions for CDF are collected and stored. Ignitions are assigned to a wildland area type based upon the planning belt in which they occurred.

The initial attack success or failure determination is made based on the fire size and intensity characteristics of each ignition. Fire size class cutoffs (based on acreage) for each planning belt were set so that if the fire size meets or exceeds the cutoff it would be classified as an unsuccessful initial attack. The fire intensity is calculated through an analysis of the fire weather which was present on the date of each ignition and planning belt existing at each ignition location. Two standard fire weather indices (energy release component or burn index) are determined based on this analysis. The fire size class and fire weather index are coupled for each planning belt and cutoff points are set to classify whether the initial attack forces were successful or not (see figure below). Fire weather data is obtained from archived weather report data files. For ignitions in which no

weather records are found (unmatched), only the size parameter is used to determine if the fire was an initial attack success or failure. The number of successful IA's is then divided by the total number of ignitions in each planning belt to determine the IA success rate for each planning belt.

Ignitions Workload Analysis Matrix

Unit: TCU

Planning Belt: G (grass)

FIRE SIZE

FWI

	Spot	Small	Medium	Large	Escape
LOW	455	138	37	7	3
MEDIUM	182	96	38	17	4
HIGH	27	7	2	0	0
UNMATCHED	45	20	2	2	2

Planning Belt ID: G (grass) Unit ID: TCU Refresh Matrix

Success:97 %

Fire Sizeclass Cutoffs for grass planning belt	FWI Index Intensity Cutoffs
Spot: Less than 1 acre(s)	Low: less than 15
Small: 1 - 10 acres	Medium: 15 - 30
Medium: 10 - 100 acres	High: greater than 30
Large: 100 - 500 acres	Unmatched: no weather observation available
Escape: greater than 500 acres	

Figure 7: LOS (Ignition Workload) analysis for the grass planning belt in TCU.

During the 1994-2004 period, TCU had 3,825 ignitions, of which 3,657 (95%) were contained within the initial attack stage of the fire as determined by the fire plan analysis. The 168 initial attack failures that were experienced during this period occurred within 157 quad 81st's. That means that some quad 81st's experienced more than one failure.

The ignition and LOS analysis were performed on ignition data for the 1994 to 2004 period. The number of ignitions, unsuccessful initial attacks, successful initial attacks and LOS score for each planning belt in TCU for this period are listed in the table below.

Table 2: TCU LOS by Planning Belt

Planning Belt	# of Ignitions	# of Unsuccessful Initial Attacks	# of Successful Initial Attacks	LOS %
Brush	258	13	245	95
Grass	1084	32	1052	97
Interior Conifer	1991	100	1891	95
Woodland	406	15	391	96
Non-Classified	86	8	78	91
Total	3825	168	3657	95

Table 2 shows the Level of Service for each planning belt, as a whole, in TCU. The TCU Level of Service Map (Figure 8) is color-coded based on the LOS score that each quad 81st received. This map shows the percentage of initial attacks that were successful based on the total number of ignitions that occurred in each quad 81st. The Ignition Density Map (Figure 9) shows the number of wildland fire ignitions occurring in each quad 81st for the 1994-2004 period. The Ignition Failure Map (Figure 10) shows where the unsuccessful initial attacks occurred in the Unit.

An analysis of the Ignition Density Map shows that the Highway 108 corridor and the Valley Springs area had the most ignitions. Areas in the Unit where there are recreation areas or a higher population density also experienced more ignitions. The remainder of the Unit is scattered with ignitions that occurred less often than the areas noted above.

During the 1994-2004 period, the largest number of unsuccessful initial attacks occurred in the San Andreas vicinity. Other areas where unsuccessful initial attacks occurred are scattered throughout the Unit.

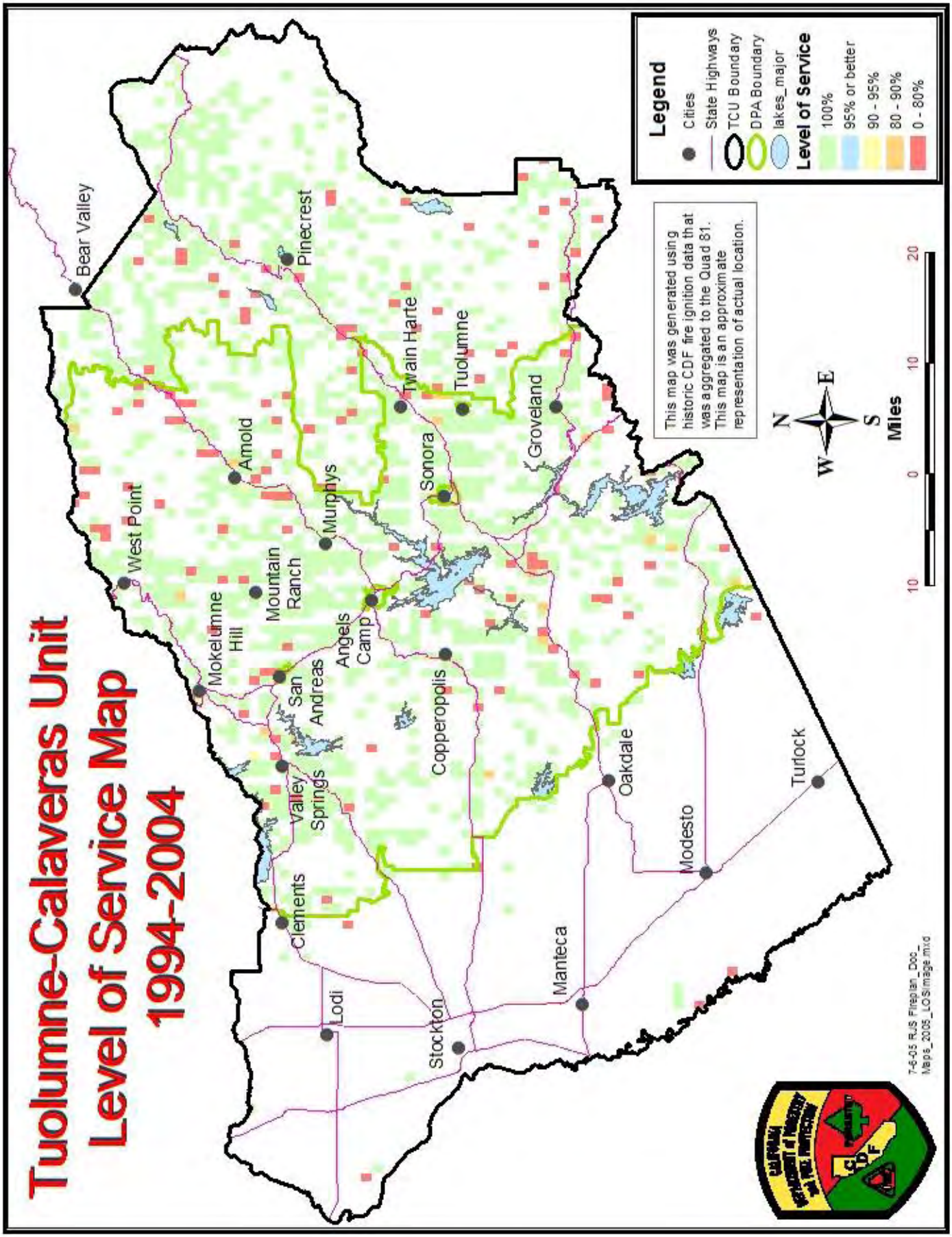

Figure 8: TCU Level of Service Map

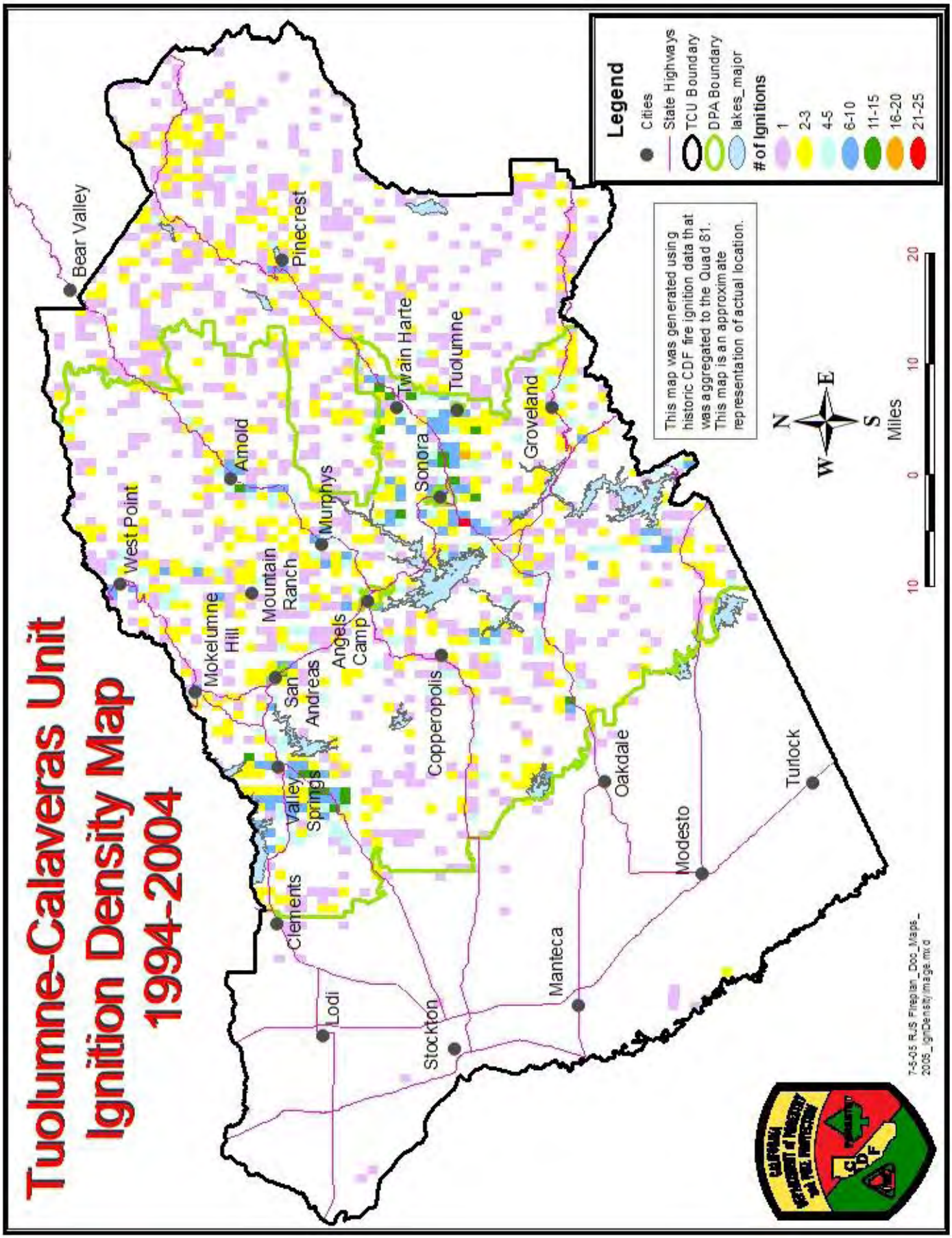

Figure 9: TCU Ignition Density Map

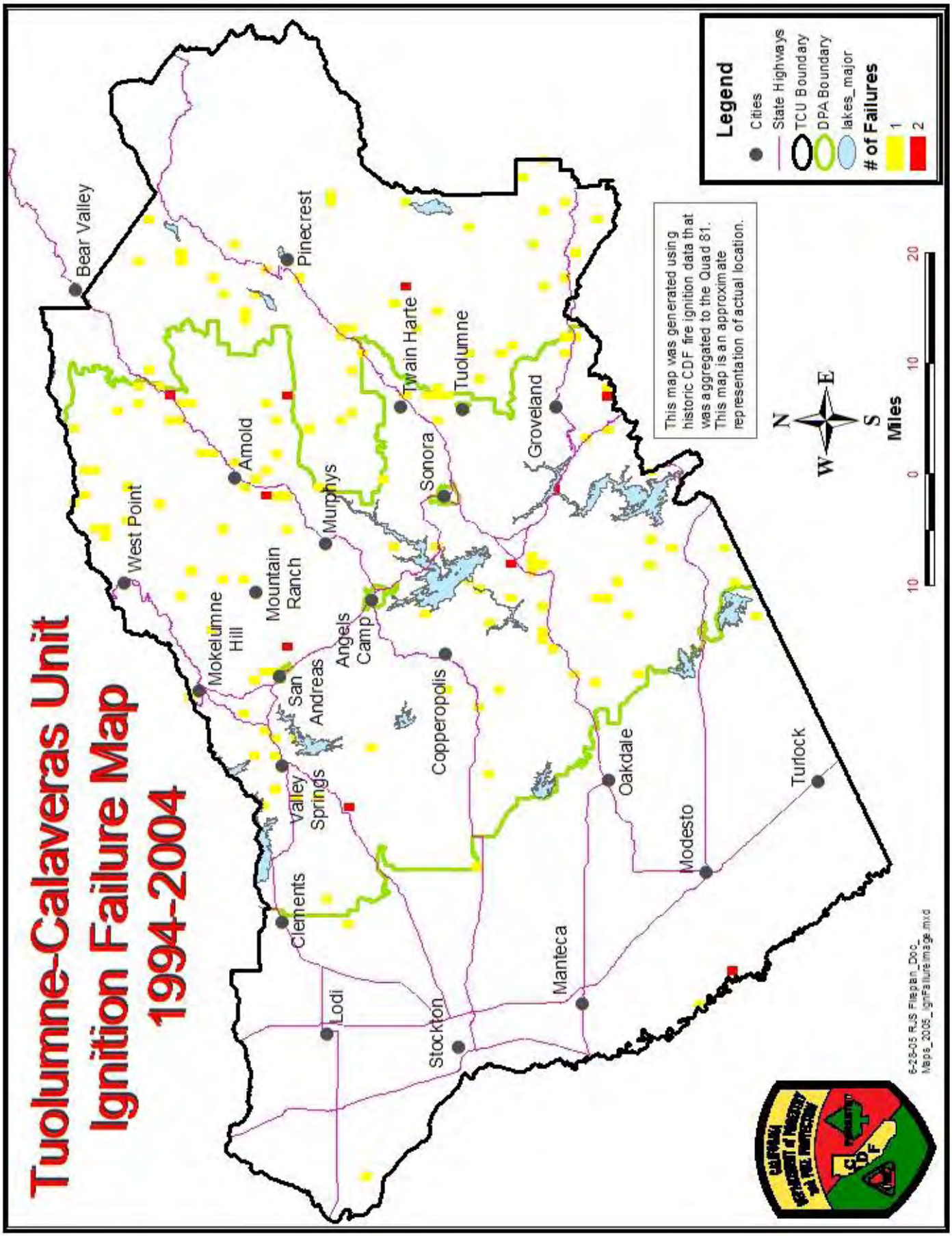

Figure 10: TCU Ignition Failure Map

Assets at Risk

The Tuolumne-Calaveras Unit has a multitude of natural and manmade values (assets) that are at risk when major wildfires occur. Fires can wreak havoc not only on commercial values, but also on nature in general by destroying fragile habitat and threatening rare and endangered species. Commercial and residential property is destroyed by wildfires within the Unit each year. Water, telephone and power utility companies have lost millions of dollars through both the direct and indirect effects of forest fires. Wildfires also cause damage to scenic and aesthetic values in rural areas.

Water and Power

The watershed areas are of particular concern since they affect so many other assets. Water, power, recreation and fisheries are just a few of the values associated with the Unit's watershed areas. Soil erosion is a major contributor to damage and degradation of our watersheds and their associated water storage and power generating facilities.

Over 48 water providers and users divert, store or transport water from the watersheds that lie within the Tuolumne-Calaveras Unit. This water is used for domestic, commercial and agricultural purposes in the Unit, Central Valley, and greater San Francisco Bay Area. Millions of people benefit from this great resource.

Many of the local water utility companies still depend on ditches and flumes to transport water to their treatment facilities. Some of the flumes have been damaged directly by past fires or indirectly by erosion of the steep slopes where they exist. Redwood water tanks are still in use in some areas of the Unit. One of these wooden tanks was so severely damaged during the 2004 Pattison Fire that it was necessary to replace the tank.

There are nine utility companies that generate hydroelectric power in the Unit. Over 5.1 million megawatts of electricity are produced each year by the 30 power plants owned by these companies. In the past, wildland fires have caused major damage to both the watersheds where power plants exist and the power line system used to distribute the electricity.

Structures

The most sacred of all possessions is a person's home or business. These are threatened almost every time a wildfire burns. Within the Unit, high concentrations of residential and commercial structures exist primarily in the communities along the Highway 4, 12, 26, 49 and 108 corridors. Outside of these areas, there are several other communities and subdivisions that have a high structure density including: Groveland, Tuolumne City and Lake Don Pedro in Tuolumne County; and West Point, Mountain Ranch and Railroad

Flat in Calaveras County. The remainder of the structures outside of these concentrated areas are primarily scattered on large acreage parcels.

Through the National Fire Plan, the Communities at Risk list was developed to identify communities that were at risk from the threat of wildfires. The official California Communities at Risk list includes 34 communities in Calaveras County and 28 in Tuolumne (Tables 1 & 2). The lists do not include the name of every small community or subdivision. Some of the communities listed cover general areas that encompass what the general public would assume to be several separate communities. Others were named based on their old town site name, not the current subdivision or commonly known name. The federal and state wildland fire control agencies are currently developing a process to add new communities to the official list. Once this is established, communities will be added if they meet the specified criteria.

Table 3: Calaveras County Communities at Risk list

Altaville	Cottage Springs	Paloma
Angels Camp	Dorrington	Rail Road Flat
Arnold	Douglas Flat	San Andreas
Avery	Forest Meadows	Sandy Gulch
Big Meadow	Ganns	Sheep Ranch
Big Trees	Glencoe	Sky High
Burson	Hathaway Pines	Vallecito
Calaveritas	Jenny Lind	Valley Springs
Camp Connell	Milton	West Point
Campo Seco	Mokelumne Hill	Wilseyville
Clements	Mountain Ranch	
Copperopolis	Murphys	

Table 4: Tuolumne County Communities at Risk list

Arastraville	Harden Flat	Sierra Village No.1
Bumblebee	Jamestown	Sonora
Chinese Camp	Jupiter	Soulsbyville
Cold Springs	Kennedy Meadow	Standard
Columbia	Long Barn	Stent
Confidence	Mather	Tuolumne City
Cow Creek	Mi-Wuk Village	Tuttletown
Dardanelle	Moccasin	Twain Harte
East Sonora	Mono Vista	
Groveland-Big Oak Flat	Phoenix Lake-Cedar Ridge	

Timber

Approximately 920,000 acres of commercial timberland exist within the Unit. It is estimated that 58% of these timberlands have a high site index, which leads to increased timber stand productivity. The largest private commercial timberland owner is Sierra

Pacific Industries (~140,000 acres). In addition to the SPI timberland, many small landowners own commercial timberland. The USFS is the largest government owner of timberland in the Unit (over 600,000 acres).

Recreation and Scenic

Recreation is a major industry in the Unit. Camping, hunting, fishing, boating, wine tasting and many other leisure activities account for a large percentage of the revenue generated in this area. Wildfires may influence these activities in several ways. First, they may destroy the recreational facilities and the surrounding forest vegetation. Second, these facilities may be temporarily closed while fires are actively burning in and around these areas. Third, once a fire burns in an area, the public's once positive perception of the area may be slighted.

The four major east-west highways, especially Highways 4, 108 and 120, are the gateways to recreational areas in the upper elevations in the Unit. The area east of West Point in the Highway 26 corridor is primarily used for hunting and fishing. The Highway 4 corridor provides access to numerous communities with summer homes, Big Trees State Park, Bear Valley, Spicer Meadow Reservoir, Lake Alpine and many other frequently visited sites in the Ebbetts Pass area. Although Bear Valley is home of the Bear Valley Mountain Resort, a winter recreation area, many summer events occur in the area including the Bear Valley Music Festival. The Highway 108 corridor contains numerous summer home areas and a variety of both summer and winter recreational opportunities. Highway 120 is one of the major access points to Yosemite National Park. Wildfires that burn anywhere on these highway corridors result in both short and long term effects to the recreational industry for the same three reasons noted above.

The Sierra Nevada foothills offer the public unsurpassed scenic landscapes that people from all over the world come to visit. Portions of State Highways 4 and 89 are designated as scenic highways. A large area of Calaveras County is in the viewshed of State Highway 88, which is a scenic highway in Amador County. Highway 120 leads to the north entrance of Yosemite National Park and provides a substantial viewshed east of Groveland.

Air Quality

The Tuolumne-Calaveras Unit has portions of the San Joaquin Valley and Mountain Counties Air Basins within its boundaries. The Mountain Counties Air Basin makes up 81% of the CDF DPA area.

During fire season, prevailing southwest, west and northwest winds tend to blow the smog generated in the valley into the Mountain Counties Air Basin. Smoke generated from wildfires that occur in the Unit adds to the already stagnant air conditions. Low inversion layers reduce the air quality further by trapping the smoke closer to the ground.

Prescribed burn projects minimize the negative effects that wildfires have on the air quality. Prescribed burning is performed when the weather conditions will allow quick dispersal of the smoke generated by the burn. These burns are aimed at reducing the amount of heavy brush and dense forest fuels. The lighter fuels that exist after a prescribed burn produce considerably less smoke when burned by a wildfire.

Historic Buildings

Since the Tuolumne-Calaveras Unit lies within the Gold Country, many historic structures exist in all areas of the Unit. High concentrations of historic buildings exist in the communities of Sonora, Columbia, Jamestown, Angels Camp, Murphys, San Andreas and Mokelumne Hill. Outside of these communities, individual or small groups of historic structures are located throughout the Unit. A survey was performed to determine which of these structures might be threatened by wildfires.

Wildlife

Most of the Unit consists of forest, brush and grass covered lands, which provide excellent habitat for both game and non-game wildlife. Many wildfires burn at such a high intensity that they affect wildlife by damaging or destroying their fragile habitat. Wildlife habitat can benefit greatly and many of the harmful effects of wildfires can be mitigated through the use of prescribed fire.

The California Natural Diversity Database will be used to locate critical habitats in high fire hazard areas within the Unit. When projects are developed in these areas, consultations will occur with the Department of Fish and Game (DFG) and mitigation measures will be used to protect and enhance any critical habitats that are found.

Infrastructure

Infrastructure includes transportation and communications systems, water and power lines, and public institutions. Water, power and structures are addressed in other asset descriptions in this document. Most of the transportation systems in the Unit are not directly affected physically by wildfires. Indirect effects influence them more through the erosion that may occur on steeper slopes following a fire.

Communications systems in are the focus of the infrastructure assets at risk analysis. Communications vaults and various types of antennas exist in remote locations throughout the Unit, usually on mountaintops. Because of their location and the heavy forest fuels that may surround them, wildfires threaten many of these facilities on a regular basis. The locations of radio, television, microwave and cellular telephone antennas will be noted in this analysis.

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UNIT-WIDE AND BATTALION PRE-FIRE MANAGEMENT PLANS

The 2005 Tuolumne-Calaveras Unit Pre-Fire Management Plan will serve as both the Unit Fire Plan and the Calaveras County CWPP. Collaborative efforts have taken place between CDF, the federal agencies, local government, fire safe councils and the fire districts in Calaveras County during the preparation and review of this plan. The same efforts were undertaken in late 2004 to develop the Tuolumne County CWPP to serve as their county wide plan. Tuolumne County opted not to fold their CWPP into the 2005 TCU Pre-Fire Management Plan at this time, but TCU will offer this option to them again in 2006.

This section of the fire plan contains a summary of the high hazard fuels, ignition problems, past wildland fire history and the assets at risk for each Battalion followed by the prescriptions for mitigating the wildland fire hazard. Prescriptions are the measures taken to alleviate the wildland fire hazard. Each Battalion Chief in TCU contacted the agencies and fire safe councils in their Battalions to gather their input during the pre-fire planning process. The information that was collected was assembled into each Battalion fire plan. If the cooperators had information regarding pre-fire projects that they were planning or implementing, it was included in the TCU Battalion plan serving or adjacent to the cooperators' jurisdiction. Projects that span between multiple Battalions will be presented in the Unit-wide section.

Addressing the structure ignitability of structures in TCU will be addressed in the unit-wide prescriptions section of the plan since broad generalities in both building construction and wildland hazard are found throughout the unit.

Many of the assets at risk from major wildfires are located in the 1000-6000 foot elevations in the Unit. Homes, hydropower, water supply, timber, watershed and many other assets are at a greater risk in these areas. Fires that start in this corridor are more difficult to control, not only because of the more hazardous fire environment but also because of how the assets themselves affect firefighting operations. When initial attack resources are unable to contain a fire before it threatens structures, some or all of the firefighters must change their attack strategy from an offensive attack to a defensive attack, to protect the structures. If this situation occurs, the fire normally gets larger. By developing projects in the areas described above, TCU staff hopes to reduce the threat to valuable assets, while at the same time improving firefighter safety and the chances of controlling fires during the initial attack stage.

TCU chief officers and pre-fire management staff used the following criteria for identifying and prioritizing projects within the Unit:

- Assets are at risk due to adjacency to high hazard fuels.
- Willing cooperators want to participate in the project.
- TCU staff are available and willing to develop, plan and implement the project.

- Local CDF and cooperating agencies fire personnel's knowledge and expertise is highly considered.
- The local fire safe council supports the project.
- Grant funds have been secured.
- The Fire Plan analysis identified the area as high hazard/risk.
- The area has had past fire and ignition history significant enough to warrant the project.

The table on the following pages lists the TCU projects that are in the active, planning and conceptual stages. Projects that were completed since the last update to the TCU Fire Plan are also included in the table. Later in this document, most of the projects listed have descriptions that give further details of the project activities.

Stanislaus National Forest – Scope of Fuel Management Program

The fuel treatment strategies are designed to reintroduce fire, reduce fuel levels, and mitigate the consequences of large damaging wildfires. These strategies allow managers to set priorities that protect fire fighters, the public, property, and natural resources. In general, landscape level fuel treatment strategies are designed to limit wildfire extent, modify fire behavior, and improve ecosystems. Fire and fuel management relies on a combination of strategies for modifying wildland fire behavior, achieving Fire Management Plan goals, and re-introducing fire across broad landscapes:

- Strategically placed area treatments
- Defensible fuel profile and fuels reduction zones adjacent to communities and areas of high value
- Wildland Fire Use

Fire managers will use these strategies for prioritizing projects over the entire Forest to eventually determine priority areas for fuel treatment. The fuel management goals include:

- Protect life and property in the wildland urban intermix zone
- Provide for firefighter and public safety
- Improve forest health and fire resiliency
- Reduce fire severity and level of resource damage
- Adhere to the directions, standards, and guidelines in the Land and Resource Management Plan
- Protect sensitive habitat

Tuolumne-Calaveras Unit 2005 Pre-Fire Management Plan CDF Project List

Table 5: TCU 2005 Pre-Fire Management Plan Project List

Priority	Battalion	Project Name	Status	Estimated Completion Year	Project Type	Net Acres
1	11	Hawver-Mountain Ranch Fuel Break	Active	2006	FP/VMP	Not Set
1	11	Ponderosa Way Fuel Break	Planning	Not Set	FP/VMP	Not Set
1	11	Pioneer VMP Project	Completed	2004	FP/VMP	137
1	11 & 12	Roadside Spraying/Fire Break Project	Ongoing	Ongoing	IMP	20+
1	11, 12 & 16	VIP Patrols on High Hazard Days Batt 11, 12 & 16	Active	2004	IMP	N/A
1	11, 12, 13, 14	Structure Protection Plans	Completed	2003	FP	N/A
1	12	State Highway 4 Fuel Elimination Project	Active	Ongoing	FP	Not Set
1	12	French Gulch LE-38 Project	Active	2005	FP/IMP	N/A
1	12	Roadside Right-of-Way Fuels Reduction Project	Active	Ongoing	FP	Varies
1	12	Strategic Fire Line Location Plan	Planning	Not Set	FP	Not Set
1	13	Winton Road Roadside Fuel Reduction Project	Planning	Not Set	FP	Not Set
1	14	Calaveras State Park 2001 WUI Grant Project	Completed	2003	FP/VMP	117
1	14	CCWD 2002 WUI Grant Project	Completed	2003	FP/VMP	50
1	14	Love Creek Ranch Fuel Reduction Demonstration Project	Active	2005	FP/VMP	120
1	14	Highway 4 Corridor Group	Active	Ongoing	FP/VMP/IMP	N/A
1	15	Ponderosa Hills 2002 WUI Grant	Completed	2003	FP	N/A
1	15	Mi-Wuk Fuel Break	Active	2004	FP/VMP	58
1	15	Gibbs Ranch 2003 WUI Grant Project	Completed	2004	FP	340
1	15	Sugar Pine Fuel Break	Active	Ongoing	FP/VMP	500+

Priority	Battalion	Project Name	Status	Estimated Completion Year	Project Type	Net Acres
1	15	Ponderosa Hills	Active	Ongoing	FP	N/A
1	15	Tuolumne Rancheria Project	Active	Ongoing	FP	40+
1	15	Highway 108 Strategic Planning Group	Active	Ongoing	FP/VMP/IMP	N/A
1	15	Ponderosa Hills 2004 RAC Grant Project	Active	2004	FP	Not Set
1	15	Columbia State Historic Park/Cattle Drive Fuel Reduction Project	Planning	Not Set	FP/VMP	Not Set
1	15	Greater Twain Harte Fire Safe Program	Active	2005	FP	NA
1	15	Ponderosa Hills/Skyline Drive Fuel Reduction Extension	Planning	Not Set	FP	Not Set
1	15	Ponderosa Hills Pine Needle Pick-up Program	Active	Ongoing	FP	N/A
1	15	Tuolumne County Wildland Fire Education Plan	Planning	Not Set	FP	N/A
1	15	Columbia Chipper Program	Active	Ongoing	FP	N/A
1	15	Ponderosa Hills Skyline Drive Demonstration Project	Completed	2004	FP	3+
1	15 & 16	Tuolumne County Fire Safe and Evacuation Plan	Planning	Not Set	FP	Not Set
1	15 & 16	Tuolumne County Community Wildfire Protection Plan	Completed	2005	FP	N/A
1	16	Hetch Hetchy/Anker #2	Active	2004	FP/VMP	518
1	16	Pine Mountain Lake #2 2002 WUI Grant	Completed	2003	FP/VMP	20
1	16	Tip Top Fuel Break	Active	2005	FP	154
1	16	Creek Fire Fuel Maintenance Demonstration Project	Planning	Ongoing	FP/VMP	Not Set
1	16	SouthWest Interface Project	Active	Ongoing	FP	N/A
1	16	SWIFT Area Pre-Attack Plan	Active	Not Set	FP/VMP	N/A
1	16	Pine Mountain Lake	Active	Ongoing	FP/VMP	382
1	16	Senior Assistance Project	Active	2005	FP	N/A

Priority	Battalion	Project Name	Status	Estimated Completion Year	Project Type	Net Acres
1	16	Rim Truck Trail Fuel Break	Active	Ongoing	FP	Varies
1	Unit-wide	2001 Fire Safe Council Formation Grant Project	Completed	2003	FP	N/A
1	Unit-wide	2001 Fire Safe Council Operating Costs Grant	Completed	2003	FP	N/A
1	Unit-wide	Small Equipment Inspections – Focus on Rental Yards and Industrial Operations	Active	2004	IMP	N/A
1	Unit-wide	4th of July Prevention Patrols	Active	2004	IMP	N/A
1	Unit-wide	Calaveras Tuolumne Fuel Break	Active	Ongoing	FP/VMP	Varies
2	11	Mokelumne Hill Evacuation Plan	Planning	Not Set	FP	N/A
2	14	Evacuation Planning	Planning	Not Set	FP	N/A
2	15	Cedar Ridge	Conceptual	Not Set	FP	N/A
2	16	Jackass Fuel Break	Planning	Not Set	FP	Not Set
2	Unit-wide	Unit Pre-Attack Plan	Planning	Not Set	FP	N/A
3	11	Hawver-Mokelumne Hill Fuel Break	Conceptual	Not Set	FP/VMP	Not Set
3	11	Joses VMP	Conceptual	Not Set	FP/VMP	~320
3	11	Filippini VMP	Conceptual	Not Set	FP/VMP	~400
3	11	Hogan Lake VMP Series	Conceptual	Not Set	FP/VMP	Not Set
3	11	Mokelumne Hill Fuel Break	Conceptual	Not Set	FP/VMP	Not Set
3	11	Jesus Maria Fuels and Pre-Attack Project	Conceptual	Not Set	FP	Not Set
3	13	West Blue #1	Conceptual	Not Set	FP/VMP	370
3	14	Big Trees Village Fuel Break	Planning	Not Set	FP	Not Set
3	14	Moran Road Fuel Break	Planning	Not Set	FP	Not Set
3	15	Peoria Flat-Rawhide Project	Planning	Not Set	FP	Not Set
3	15	Tuolumne City Project	Conceptual	Not Set	FP/VMP	Not Set
3	16	Old Priest Grade Fuel Break	Planning	Not Set	FP	Not Set

Unit-Wide Plan

The summaries for the Unit-wide high hazard fuels and assets at risk are given in the previous section of this document. This section of the plan will only explain the mitigation measures that are being implemented on a Unit-wide basis to reduce the hazard and risk.

Unit-Wide High Hazard Fuels Prescriptions

The Calaveras Tuolumne fuel break is a cooperative fuel break system with the USFS, BLM, California Department of Parks and Recreation (CDPR), Sierra Pacific Industries (SPI) and local landowners in both Calaveras and Tuolumne counties. The USFS, CDPR and SPI have been performing various fuel reduction projects on their own property. The USFS and SPI have logged, performed biomass operations and completed prescribed burns on their land. The CDPR has completed various fuel reduction and prescribed burn projects. The Calaveras State Park 2001 WUI Grant Project mentioned earlier is part of this fuel break system.

Many values, both public and private, are at risk from wildfires that burn in the project area. This area covers thousands of acres of prime timberland owned by Sierra Pacific Industries, the USFS and many other private individuals and government agencies. It also includes the Mokelumne and Stanislaus river watersheds which feed numerous hydroelectric and water supply facilities. The recreation industry is a major component in the local economy in both Tuolumne and Calaveras Counties. Major wildfires have, in the past, contributed to hundreds of thousands of dollars in losses to the local recreation and tourist industries. There are many residential and commercial structures that have been burned or damaged by wildfire in this area. This fuel break system will help firefighters control wildfires before they result in unacceptable government costs and citizen losses.

All of the proposed fuel breaks have been strategically located to maximize the efforts of fire control resources in wildland fire situations. Several sections of this fuel break system were used to contain the Darby Fire in 2001 as noted in the Pre-Fire Success Stories. Another portion of the existing fuel break system was used to stop the Old Gulch fire in August 1992, which had already cost the state $12.2 million in suppression costs. Without this fuel break, the Farsite fire prediction program and local fire professionals estimated that the fire would have burned an additional 5,000 to 10,000 acres. This would have increased the suppression costs by $5 to $10 million in addition to causing extensive resource and property damage. The area encompassed by this fuel break system has had numerous major wildland fires in the past, which have cost the state millions of dollars in suppression costs. This system has already saved the state great expense. Its expansion will only provide further savings.

This fuel break system will be an ongoing project that will utilize CDF inmate crews to construct and maintain the proposed and existing fuel breaks. SPI will continue to do focused logging, biomass operations and prescribed burning on the fuel breaks on their land. All of the cooperators will continue to use their resources to assist with the construction and maintenance of the fuel breaks.

An estimated 15-20 miles of fuel break work has been completed on this system since 2000. The USFS logged, used CDF crews and contracted to have dozer and mastication work done in the Winton Road area and also several areas on the Highway 4 corridor. Maintenance work on existing fuel breaks is occurring each year, but a more in depth work schedule is needed to ensure maintenance work is occurring on a regular basis on high profile fuel breaks around communities. SPI has continued their diligent fuel break efforts on their land in both Calaveras and Tuolumne Counties. The CCWD 2002 WUI Grant Project is also a part of this system.

Unit-Wide Structure Ignitability Summary

The Tuolumne-Calaveras Unit has a variety of structural ignitability concerns which can be broadly categorized based on the building construction and wildland fuels commonly found at different elevation ranges. Commercial building construction in the unit varies from concrete/block to wood sided and is very similar to commercial buildings found in rural areas in the valley and bay area. The following bullets list the four general zones and the structural ignitability found in each zone.

- From the western Unit boundary to about the 1,000 foot elevation, grass and oak woodland are the predominant fuels. Some blocks of brush exist in this area, but they are usually outside densely populated areas. Grass, being the least hazardous wildland fuel type, still has the potential to damage or destroy structures certain conditions. Homes that do not have proper vegetation clearance around them are the greatest concern to firefighters. Wood piles too close to homes and debris scattered near the structures also hampers firefighters' efforts to save homes when threatened by wildfires. Days where critical fire weather occurs (high winds, low humidity, high temperatures, etc.) are another example of threatening conditions.

  Various building construction types are found in this area including stucco, metal, vinyl and wood sided homes with composition, tile or metal roofs. Some older homes can still be found with wood shake or shingle roofs. Wood decks and attached wooden fences are found on many of the homes in this area, which adds to the wildfire vulnerability of the structure. Many homeowners with stucco or metal sided homes think their homes are completely safe from wildfires. This is not the case. Many homes with this type of construction catch fire due to embers blowing into attic or crawl space vents, and open windows. Also, use of flammable landscape plants close to homes has contributed to homes being damaged or destroyed by wildfires.

- From 1,000 feet to 2,200 feet more dense vegetation is found consisting of scattered grass areas, oak woodland, brush stands and dense oak and mixed conifer stands. The upper part of this region is a transition zone to the mixed conifer stands that exist in the next zone. This and the next higher elevation zone are the most hazardous in terms of structural vulnerability to wildfires. The dense vegetation found in these zones is more prone to transport embers (or fire brands) from wildfires longer distances, thus producing a greater threat to structures that are further from the fire. High winds in these areas combined with the high hazard fuels to create an even more critical situation.

  In this zone, the same construction types situated at the lower zone are found, but as you increase in elevation, more wood sided homes have been built to blend in with the natural surroundings. Roof types are similar to the previous zone, but tile and metal roofs are becoming more common on newly constructed homes. The same conditions noted in the lower zone contribute to wildfire vulnerability of structures in this zone. The main difference in this zone is that the wildland fuels are more hazardous.

- From 2,200 feet to about 6,500 feet mixed conifer (evergreen) vegetation exists. There are also areas of dense brush and brush/oak stands in this zone. The vegetation is highly flammable in this zone, especially if surface litter (leaves, needles, dead grass, etc.) and ladder fuels are dense. Ladder fuels are the vegetation beneath the trees that can spread a fire from the ground to the tree tops causing the trees to torch. Torching trees spread embers a considerable distance causing a greater threat to structures in the area.

  The building construction in this zone consists of mostly wood sided, composition roofed homes and is very similar to the upper elevations of the previous zone. Variations exist as mentioned in the previous zone. With most of these homes having wood exteriors and decks, they are very susceptible to sustaining fire damage due to wildfires. The fire safe requirements of Public Resources Code 4291 (PRC 4291) are a must in this area if homeowners want to give firefighters a fighting chance to save their homes when threatened by wildfires.

- The 6,500 foot and above zone could be considered the high elevation zone where true fir, lodgepole pine, aspen and other high elevation vegetation exists. This zone is less fire prone due to the shorter summer and less hazardous fuels. This does not mean that damaging wildfires don't occur in this area. Drought conditions in the last 25 years have resulted in critical fire conditions even in this zone.

  The building construction in this zone consists of mostly wood sided, metal roofed homes and cabins. Some of the older structures have wood shake or shingle roofs. Many of the homes are seasonal and only used during the summer months. Some of the more remote structures have little or no clearance of

wildland fuels around them. The same wildfire vulnerability to structures exists in this zone as does in the lower elevation zones.

Unit-Wide Structure Ignitability Prescriptions

Two of the best methods to reduce the ignitability of structures in wildland areas are to promote fire safe building construction measures and fire safe clearance around structures. The state legislature is currently developing more stringent building codes for areas conducive to wildland fires. It is expected that the degree of the proposed standards will vary based on the wildland fire hazard present at the construction site. More hazardous areas will have more fire safe requirements than areas with a lower hazard. Maintaining the clearances as required by section 4291 of the Public Resources Code (PRC4291) will also reduce the number of structure ignitions resulting form wildland fire exposure. CDF's fire safe inspection program (LE-38 Program) is used to enforce compliance with PRC-4291.

Most of the projects in the Battalion prescriptions that are aimed at reducing wildland fuels and educating the public on what they can do for themselves to protect their homes from wildfires will assist in reducing structure ignitability. Projects focusing on these goals along with enforcing fire safe building construction standards are key items that will be used to address the structure ignitability problem in TCU. Refer to the Battalion fire plans for the specific projects that are proposed for the Unit.

In order to mitigate the wildland fire problem in Tuolumne County the California Department of Forestry and Fire Protection's Tuolumne-Calaveras Unit Chief and The Tuolumne County Board Of Supervisors directed the Tuolumne County Fire Marshal to make the following amendments to the County's adopted Ordinance Codes for the California Building Code (CBC), California Fire Code (CFC) and the Fire Safe Regulations with Public Resources Code 4290 and 4291. Many of the amendments will help mitigate the structural ignitibility conditions currently existing in Tuolumne County. The amendments have been placed in the Tuolumne County Fire Marshal WUI Mitigations section in the Battalion 15 Fire Plan in this document.

2004 Unit-Wide Ignition Summary and 2005 Ignition Management Prescriptions

The 2004 Fire Season in the Tuolumne-Calaveras Unit opened May 10, which is the earliest opening since 1990. It ended October 19th. The season was very destructive with slightly below average ignitions, but above average values lost. There were over $10 million in damages with 26 homes lost. There were 380 fires in the Unit in 2004 compared to the five-year average of 386. Acres burned were 7,796, which compare to a five-year average of 8,926. During the 2001 season 30,137 acres burned and only 884 acres during the 2002 season.

There were three large and damaging fires in 2004. They were the Copperopolis Fire which burned 3,444 acres and destroyed one home, the Armstrong Complex which burned 963 acres and destroyed three homes, and the Pattison Fire which burned 2,676 acres and destroyed 17 homes. The leading cause of fires during the 2004 season was vehicle use followed by arson, equipment use, and miscellaneous causes. This mirrors the 2003 season's causes. The cause of the Copperopolis Fire and the Pattison Fire was vehicle use. The Armstrong Complex was four related roadside arson fires.

2004 ignition management projects focused on reduction of equipment caused fires, reduction of fireworks related incidents during the 4th of July period, close monitoring of arson fire activity, and tighter burn permit administration. Focus of the 2005 Ignition Management Plan will primarily be a continuation of the activities initiated in 2003/2004 to deal with equipment caused fires, arson fires, 4th of July fireworks activities, and burn permit escapes and violations. The specific actions for each category are discussed below.

Of primary concern with respect to equipment caused fires is the negligent use of mowers and trimmers, and improper clearance while welding, cutting, or grinding. During 2001 mowers and trimmers caused 37 fires including the 5,167 acre Leonard Fire. This figure dropped to 10 in 2002, 15 in 2003 and 11 in 2004 after a substantial increase in public education through Red Flag Volunteer in Prevention (VIP) patrols, roadside signs, newspaper articles and adds, radio spots, fair/event displays, and informational handouts at the fire stations. The Unit will continue the same actions, though somewhat modified during 2005. During 2004 welding, grinding, and cutting caused 15 fires including the 600 acre Hunt fire. For 2005, the Unit will focus public education similar to that used for mowers in an attempt at reducing fires from this activity.

Arson caused fires have been on the increase in the Unit and saw a substantial jump (62 fires) during the 2002 season. During the 2003 season there were 47 arson fires, and during 2004 there were 49, which are both above the 5-year average of 44. Of particular concern during 2004 was a series of roadside arson fires in the Sheep Ranch area (Armstrong Complex) that consumed 963 acres and destroyed three homes. Close monitoring and investigation of all arson fires will continue to be a priority of the Unit's Law Enforcement (LE) section to develop patterns and suspects so as to lead to future arrests.

Historically, illegal fireworks activities during the 4th of July period have caused both increased fire occurrence and equipment draw down due to the large call volume. Red Flag VIP patrols, accompanied by CDF Law Enforcement patrols as well as federal and local LE have been an effective deterrent of fire occurrence in specific trouble spots. The subdivisions and recreational facilities around the major lakes/reservoirs were the primary target areas for this activity in 2004. In 2005 an area of primary focus will be the Rancho Calaveras/Jenny Lind area where 'dangerous fireworks' have been prevalent for the past few years.
Due to the Unit's large number of issued burn permits (estimate 8000 + in 2004), burning violations and escapes have been frequent during the spring, early summer, and fall.

There were 50 debris burn escape fires prior to opening of the 2004 fire season. The implementation of a Statewide Fire Season burning suspension has substantially decreased the number of ignitions from this category, and should be continued annually. For the past four years, the Unit has increased tighter controls on permit issuance and increased law enforcement action on violators to help reduce the number of these incidents. This will continue in 2005.

Additionally, to help avoid events similar to the Sourgrass Complex of 2002 and the Cottage Springs Fire of 1997, tighter restrictions have been placed on the conditions of Sierra Pacific Industries Project Burning Permit issued during the fall. New in 2005, are burn permit issuance MOU's for dooryard hazard reduction burning with several fire districts in the SRA of San Joaquin and Stanislaus Counties. Prior to this, all burn permits in those two counties were issued by the San Joaquin APCD. Monitoring of this new procedure will be conducted by the respective CDF Battalions overseeing those areas.

Unit-Wide Large Damaging Fire History Summary and Prescriptions

The Tuolumne-Calaveras Unit Fire History Map shows that TCU has had a significant history of major fire incidents over the last 50 years. Almost every community in the unit has been threatened by wildfires that have occurred during this period. The greatest hazard to these communities due to the fuels, weather and topography exists on and east of the Highway 49 corridor. The Valley Springs, Copperopolis and Lake Don Pedro areas are examples of vicinities outside this corridor that are threatened on a regular basis.

As mentioned in the Fire Environment section of this document, conditions that lead to the occurrence of major fires exist throughout much of the fire season. The question to ask is not, "Will a major fire occur?" but "When will a major fire occur?"

Most of the mitigation measures that will help reduce the occurrence of large damaging wildfires are addressed in the Battalion plans. One project that is a Unit-wide is the Tuolumne-Calaveras Unit Pre-Attack Plan. It is described below.

Tuolumne-Calaveras Unit Pre-Attack Plan – The Tuolumne-Calaveras Unit Pre-Attack Plan Project will utilize the experience of Ranger Unit personnel and data from past studies and fires to develop a pre-attack plan for the Unit. This information will be used to create detailed maps and databases that firefighters can use to develop plans for fighting future wildfires. Information incorporated into the plan will include: fuel breaks; water sources; staging area locations; incident base locations; helibase locations; past fire history; remote structure locations; etc. This project is in the developmental stages and will use experience gained from the SWIFT Pre-Attack Plan Project during its implementation.

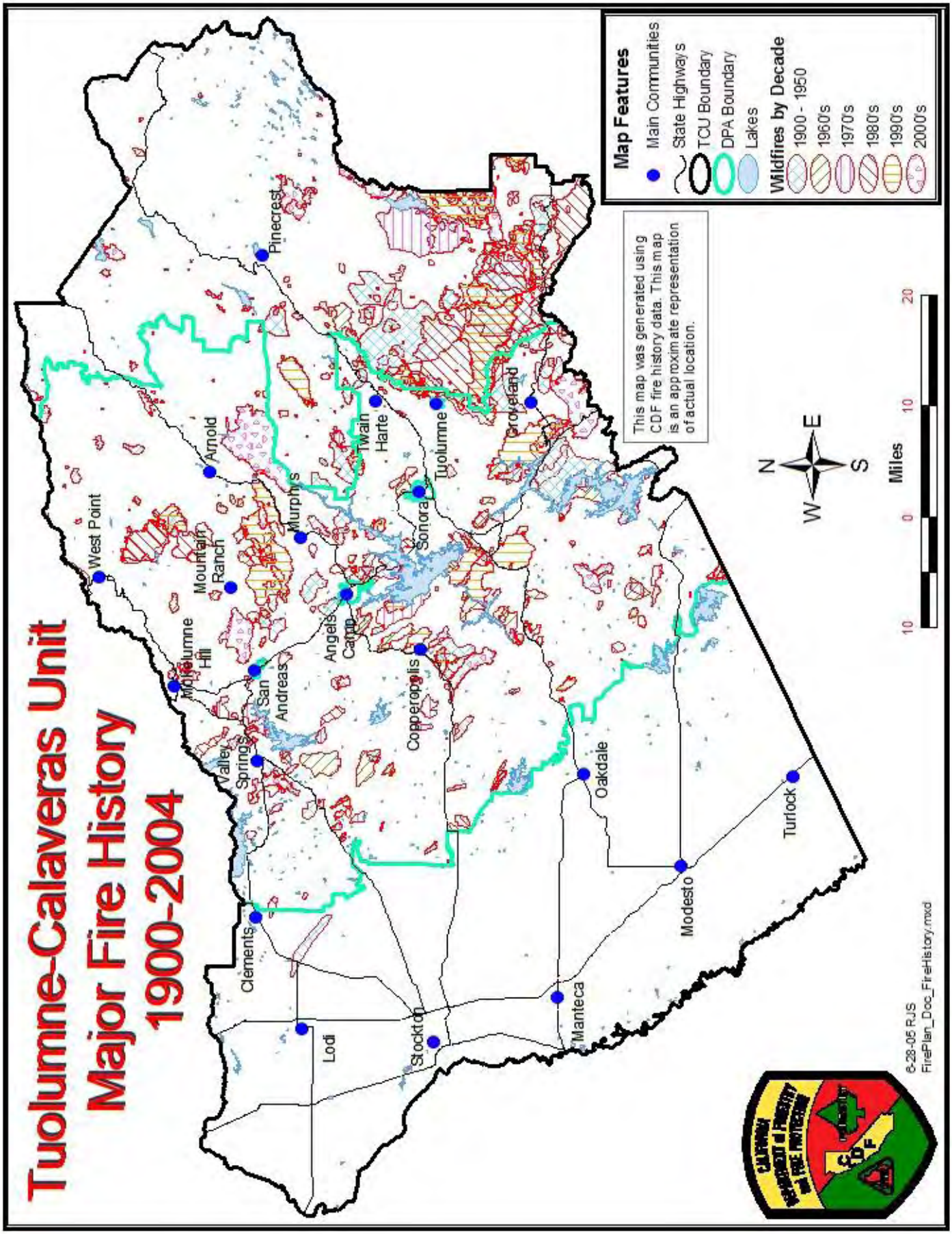

Figure 11: TCU Major Fire History Map

Battalion 11 Plan

Battalion 11 Overview

Battalion 11 stretches through the general area of Highways 12, 26 and 49 in Western Calaveras and Eastern San Joaquin Counties. The communities of Wallace, Burson, Campo Seco, Paloma, Valley Springs, Jenny Lind, San Andreas and Mokelumne Hill are within this Battalion. Many of the towns in this Battalion serve as bedroom communities for the larger cities in the San Joaquin Valley and even the Bay Area. This area was predominantly ranch land before development started eating away at the open areas in the late 1900's. Recreation, wineries, ranching and small businesses are the main source of revenue in this area. The most populated area in the Battalion is the seven mile wide north/south strip that extends from Camanche Reservoir to Jenny Lind. Rapid development over the last 20 years has led to the addition of many new homes in this area. This rate of development is expected to continue indefinitely into the future. The Foothill, Jenny Lind, Mokelumne Hill and San Andreas Fire Districts are within Battalion 11. The San Andreas (2 engines) and Valley Springs (1 engine) CDF FFS are within this Battalion. The San Andreas station serves as the Battalion as well as the Unit headquarters.

Battalion 11 Fuels, Assets at risk, Ignition and Fire History Summary

The primary fuels within this Battalion include manzanita, chemise, toyon, oak, bull pine and various grasses. Much of the brush is over-mature and exceeds six feet in height. Fuel loading in much of the foothill portion of the Battalion is heavy. Historical data indicates that fires in the upper portions of this Battalion, with this type of fuel loading, are difficult to contain and have a high BTU output. The lower elevations of this Battalion have a combination of chaparral brush, oak woodland, bull pine, and grass. Though the fuel loading is generally lower here, the population density is greater, thus increasing the threat to life and property. Much of the fuel bed in the lower elevations is broken up by the road system and grasslands found throughout this area.

Primary Assets at risk within the Battalion cannot be listed by priority, due to the intrinsic value placed upon private citizen's assets. However, listed below are assets at risk that have been considered, relating to Pre-Fire Management within the San Andreas Battalion:

- Residential structures and people located throughout the Battalion. The areas with the highest population density and residential construction are located in the lower areas of the Battalion. The Pattison Fire Complex of 2004 resulted in a loss of seventeen homes in the Valley Springs area. However, many rural homes are also located in the upper area of the Battalion and also pose a high risk, due to the history of major fires in that geographical area.

- Fricot City and Mokelumne Hill – These two communities are located on terrain directly above major drainages. Each has evacuation problems relating to population density and poor road systems.
- Pasture land – Ranches located throughout the Battalion depend upon the annual grasses to feed their livestock.
- Waterways and riparian areas – multiple year-round and seasonal streams are located within the Battalion.
- Primary roadways and supporting infrastructure
- Historical and Archeological sites
- Power and phone poles and lines
- Livestock

In 2004 fire season, Battalion 11 had 77 wildland fire ignitions. Fires caused by vehicles were the number one cause (19), followed by equipment use (14), arson (9), playing with fire (8), debris burning and other cause(6 each), undetermined (5), campfire and smoking (4 each), and electrical(2). Equipment use increased over the previous year by one. These statistics show that it is still a problem. Arson fires increased over the previous year by three, but were still lower than the 13 fires in 2002.

Historical fire data on large damaging fires within Battalion 11 has until last summer reflected fires occurring at the lower end of drainages located in the Upper Battalion. These fires follow terrain and fuels, burning up into the upper Battalions of Calaveras County. Containment has occurred primarily due to changes in fuels, topography, and/or weather allowing fire suppression resources to attack the head and flanks of these fires. The Pattison Complex occurring in the lower elevations of the Battalion has added a new aspect to the history of large damaging fires within the Battalion. The Pattison fires of 2004 pushed by 20 mph winds grew at extreme rates of spread, taxing fire resources to their limits and destroying seventeen homes on its way to a final size of 1900 + acres.

Battalion 11 Prescriptions

Due to the geographical and fuel differences within the San Andreas Battalion, mitigation prescriptions will be broken into two regions – Upper Battalion (higher elevation) and Lower Battalion (lower elevation). Projects that are scattered or encompass the entire Battalion are listed in the Battalion wide section.

The Pattison Complex has demonstrated a need for an aggressive fire prevention plan throughout the Battalion emphasizing education and mitigation of hazards on private and public property. As advances in alternative methods of fuel removal/modification become available, these will be studied and used if applicable.

Upper Battalion 11 Projects:

Fuel Break construction:
Utilizing historical fire data, fuel break agreements and construction will be pursued in areas identified as favorable to stop future fires before they become catastrophic. Primary areas for fuel break construction currently under review are: Hawver Road to Mountain Ranch Road (Leonard Fire), Ponderosa Way to San Antonio Creek (Old Gulch Fire), Hawver Road to Highway 26 at Mokelumne Hill, Mokelumne Hill above Mokelumne River canyon. Current priorities of these fuel breaks are as follows:

- Hawver - Mountain Ranch Fuel Break
- Ponderosa Way – San Antonio Creek Fuel Break
- Hawver - Mokelumne Hill Fuel Break
- Mokelumne Hill Fuel Break – This fuel break will protect the Mokelumne Hill Community from fires that originate in the Mokelumne River Canyon. It will be constructed near the top of the canyon adjacent to the community. Some parts of the fuel break area currently have light fuels, but other areas contain heavy brush and dense woodland. The heavier fuels will be treated during this project. No date has been set for its completion.
- Jesus Maria Fuels Project

Control burns:
All VMP control burns will be prioritized based upon historical fire data. Currently the only control burns under consideration are located within or along the perimeter of the Leonard Fire. These burns will be conducted with emphasis on fuel modification from a major brush component to primarily grass and oak overstory. The burns under consideration at this time in order of priority are listed below. Other burns will be considered based upon viability of project and benefit relating to containment of future wildland fires. No other burns have been identified at this time.

- Joses VMP – Approximately 320 acres located at upper end of Leonard Fire.
- Filippini VMP – Approximately 400 acres located along the northern boundary of the Leonard Fire.

Lower Battalion 11 Projects:

- Mokelumne Hill Evacuation Plan
- Jesus Maria Project – Jesus Maria Road is in the Jesus Maria Creek canyon east of Mokelumne Hill. The fuels in the area vary from oak woodland to dense brush. Homes are scattered throughout the area and it is anticipated that more will be built in the future. Due to the high hazard fuels and steep canyon, many of the homes are at great risk when wildfires occur. The objective of this project is to reduce the fuel hazard around the homes and develop a pre-attack plan to assist firefighters battling fires that ignite in the area. In 2002, Battalion 11 personnel began collecting data for the pre-attack plan. No timeline has been set for implementing this project, but data collection will continue as available staff time allows.

- Jesus Maria Pre-Attack Plan Project – This project will provide an inventory of where structures exist and where critical firefighting resources are located in the Jesus Maria Road Area.

Fuel Break Construction:
Maintenance of the Hogan Lake access road – This is used as a primary fuel break for Bear Mountain and as a fire access road for all fires occurring on the east side of Hogan Lake.

Control Burns:

- Pioneer VMP – The Pioneer VMP consists of a 137 acre prescribed burn at the Highway 49 and 12 intersection on the outskirts of San Andreas. This is one of the areas in the Battalion 11 & 12 strip burn project that has had several fires (many are arson caused) over the years that have threatened assets on the west side of San Andreas. Heavy fuels exist in the area that make it difficult to control fires when they occur. Once this project is completed, it will be much easier for firefighters to control fires that occur in this area. The first of three burns on Pioneer was conducted last fire season. Since that time, one of the landowners has removed much of the vegetation by mechanical means, removing the bulk of the heavy fuels. As a result of this, the remaining two burns will be conducted on a much smaller scale, focusing primarily on the remaining properties with the heavy fuel buildup.
- Hogan Lake VMP Series – Possible series of burns to remove brush from lake shore and remove non-native species of weed located on back side of lake.

Battalion-Wide Projects:

- LE-38 Inspections – Utilizing VIP assistance and engine companies, areas identified as high hazard will have the greatest emphasis. A blanket approach for specific locations within the Battalion is being considered, along with a public relations campaign focusing on notification of possible inspections as well as information relating to minimizing hazards around the residence.
- Fire Prevention Signs – Located along primary roads throughout the Battalion, current signs are in need of replacement. Additional signs are needed along the Highway 49 corridor and Mountain Ranch Road.
- Issuance of burn permits after May 1st.
- Fire Prevention Signs
- Enforcement of laws relating to wildland fire.
- Investigate all fire starts.
- Support burn barrel ban.
- Seek to prosecute all Arson type fires.
- Seek to site all power line clearance violations.
- Require all campers to have campfire permit.

Battalion 11 Cooperators Projects

Jenny Lind Fire Protection District Projects:

- #1 Priority – Educate community on fire hazards.
  - Initiate fire hazard inspection program.
  - Initiate Public Safety Awareness Day.
  - Notify and inform landowners of unimproved lots of fire risk and hazard reduction measures.
  - Distribute material to Real Estate Offices for new owners in the community.
  - Grant funding to be sought.
- #2 Priority – Hazardous Fuels Reduction
  - Target Areas - Hillvale, Crestview, Ridgeview Brooks, Ross, Didier, Hagen and Leckie Roads (this is the ridgeline area directly effected by the 2004 Pattison Fire).
  - Establish 150' to 200' foot clearance below structures along above listed ridgeline, utilizing hand crews and mechanical methods for construction and product removal (seek to reestablish utilization of CDF Dozer Training class equipment to construct clearance; seek to utilize CDF hand crews).
  - Establish program to maintain clearances utilizing herbicides
  - Grant Funding to be sought
- #3 Priority – Hazardous Fuels Reduction
  - Shaded fuel break along western flank of Calaveras River drainage utilizing mechanical and hand crew methods.
  - Location to be from area of Silver Rapids Road to the area of Milton Road.
  - CEQA to be contracted.
  - Homeowner agreements must be established.
  - Grant funding to be sought.
- #4 Priority – Wildland Fire Water System Upgrade
  - Improve water storage with the purchase and installation of larger water tanks around District.
  - Grant funding to be sought.

East Bay Municipal Utility District Projects for Pardee and Comanche Lake areas:

- Annual Disking – 18.7 miles per year.
- Annual fire road/trail mowing – 110.6 miles per year.
- Annual mowing in campgrounds and other recreation areas - 387 acres.
- Fuel modification due to grazing: 13,604 acres.
- Heavy fuels modification in acres: 15 acres.
- Removal of downed trees and excess brush around MHP.
- Fuel wood Program – Woody Fuels Management Program.
- Annual fire training of employees – 16-24 hours per year.

- Annual Fire extinguisher training for concession employees.
- Annual Fire Safety Audit of District facilities.
- Red Flag Protocol – Minimum of 2 rangers on patrol during red flag events.
- Prescribed burns
- Fire Prevention Plans for Concessionaire.

Battalion 12 Plan

Battalion 12 Overview

Battalion 12 extends from the San Joaquin Valley at the 100 foot elevation, east approximately 48 miles to the Sierra foothills to the 2500 foot elevation. State Highway 4 is the main highway corridor in the Battalion and the main communities are Copperopolis, Angels Camp, Vallecito, Douglas Flat and Murphys. The population and growth in the greater Copperopolis area is similar to that found in western Battalion 11. The most populated areas in the Battalion are found in Copperopolis, Angels Camp and Murphys. Ranching, wineries, tourism, recreation and small businesses are the main source of revenue in this area. The Copperopolis, Altaville-Melones, Angels Camp and Murphys Fire Districts are within Battalion 12. The Altaville (1 engine), Copperopolis (1 engine), and Murphys (1 engine) CDF FFS are within this Battalion. The Altaville station serves as the Battalion headquarters.

Battalion 12 Fuels, Assets at risk, Ignition and Fire History Summary

The fuel types change from grass in the western portion of the Battalion, to brush and mixed conifer in the eastern portion. Although the Battalion is approximately three quarters grass and rangeland predominately utilized for cattle and sheep production, brush models mosaic through this area, finally becoming a solid brush model at the 2000 foot elevation. Areas of continued concern are where brush models directly impose on interface and intermix areas, particularly the ingress and egress roadways into these areas.

History has shown that all assets within the Battalion have the potential to experience risk from wildfire at some time or another. The best way to address this will be to prioritize treatments based on the following criteria:

- First Priority – Occupied residential and commercial structures.
- Second Priority – Grass and Rangeland utilized for cattle and sheep production.
- Third Priority – Water shed protection.

The areas and communities in Battalion 12 below the 2000 foot elevation consist of scattered ranches and farms involved in agricultural use, or are in subdivision form (the "XX" Subdivisions). The fuel model for this area is predominately grass, generally grazed down significantly by the end of summer reducing the risk of structure loss in the

event of wildland fire. At this same time, the fuels above 2000 feet are reaching their most vulnerable and susceptible timeframe to sustain vigorous fire activity. For this reason, a shift in prevention attention to the structures located in these areas is prudent.

Historical ignition causes in the Battalion have been caused by equipment (motor vehicle exhaust, mowers and farm equipment exhaust and friction), and debris burning. In 2004, debris burning causes were at an all-time low of only one incident, with zero acres burned. This can be attributed to the now "Annual" suspension of open burning being enacted by CDF. This practice should continue. However, motor vehicle and equipment caused fires showed a substantial increase in 2004, resulting in two major wildfire incidents in the Battalion. Causes attributed to this increase can be placed on poor public information about the use of mechanical equipment in wildland fuels during times of extreme fire danger, and the fact that roadside spraying and removal of flammable vegetation by state and county road departments has been curtailed. This has allowed flash fuels, receptive to ignition from vehicle use, to encroach directly adjacent to the roadways.

Fires caused by equipment, specifically lawn mowers being utilized to remove grass from around structures (PRC 4291 requirements), was the number one preventable fire cause in Battalion 12 in 2000 and 2001. Public information about this issue, displayed to the public via 4x8 Fire Prevention signs, reduced the average from 16 fire starts each year, to a low of 3 in 2002. Battalion staff will continue promoting the fire prevention message regarding equipment caused fires via the 4x8 signage. One additional signboard and stand will be installed on Copper Cove Drive to better carry this message to the residents of Copper Cove, Saddle Creek, and Oak Canyon. This is an annual program in which signs are posted throughout the fire season.

Large fire occurrence in the Battalion has been on approximately a 10 year average cycle. The areas of concern during a large fire will be the Interface component in and around the town of Murphys, and the Intermix in the "XX" subdivisions

Battalion 12 Prescriptions

Roadside Fuel Mitigations, VIP Patrols, and CDF fire prevention education efforts at both the state and local level that attempt to reduce fire starts will also contribute to protecting assets in the Battalion.

- Roadside Right-of-Way Fuels Reduction Project – Wildland fuel loading along the roadways of the Diamond XX, Circle XX, and Bar XX Subdivisions (XX subdivisions) is to the extent that fire spread through these areas will become difficult, if not impossible to stop or contain with initial attack resources. Over 350 residential structures currently exist in the three subdivisions. Ingress/egress for residents and emergency personnel in the event of a wildfire is currently prohibitive due to flame lengths that cross the roads in these subdivisions. The Roadside Right-of-Way Fuels Reduction Project will aim at reducing the brush,

small trees, and hanging ladder fuels along identified roadways in the "XX" subdivisions. Fuel reduction will be accomplished by CDF fire crews, with disposal of the removed vegetation accomplished by either "pile & burn" or mechanical chipping. The Calaveras Foothills Fire Safe Council submitted a grant proposal to the California Fire Safe Council Grant Clearinghouse in February 2004 to provide funding for this project, but their proposal was not approved in that round of grants. The original proposal was re-worked and submitted in the 2005 round. It has been tentatively funded in 2005 through the Proposition 40 grant program.

In 2004, this project was initiated and completed in the Diamond XX Subdivision in the community of Copperopolis. An initial attack and a major wildland fire occurred in this subdivision during the 2004 fire season. Because of the measures taken in the project, the initial attack fire burned to a treated roadway and self-extinguished due to lack of fuel. The major fire consumed all vegetation in the southern part of the subdivision, but due to the measures taken, no structures were lost, roadways were utilized as control points and control lines, all residents were able to egress the impending fire area, and responding fire equipment and personnel were able to access the affected area.

- Treatments will occur in the following subdivisions:
  - Circle XX – completion in April 2005
  - Bar XX – completion in April 2006
  - Diamond XX – completion in April 2007

- The goal of the fuel reduction measures is to accomplish the following:
  - Create enhanced vehicle view along the roadway.
  - Lessen wildfire intensity along the roadways in the event of fire, providing safer ingress and egress routes for emergency personnel and equipment.
  - Lessen wildfire intensity along the roadway in the event of fire, providing safer evacuation routes for affected residents.
  - These measures will create more advantageous fire control points to stop wildfires by reducing the fire intensity and increasing the chance of quickly containing spot fires that occur in the treated areas, and creating a fuel bed conducive to firing and direct suppression tactics.
  - Based on the anticipated success of these projects, expansion of this project concept will occur into the Murphys and Sheep Ranch areas (higher elevation wildland fuels), by obtaining grants via the local Fire Safe Council. In Battalion 12, it is believed that this is the most efficient method to provide community protection from wildfire.

This project is expected to be a continual and annual project. Once all "XX" subdivisions have been treated at the end of 2006, annual maintenance will be conducted. Whereas this will only require maintenance once the initial treatment

has occurred, fire crew time commitment will be minimal. Project work requests for Vallecito Conservation Camp fire crews have been secured with sponsorship from the Calaveras County Public Works Department and local community service district for a 10 year period.

During a meeting with the Copperopolis Fire Protection District chief (CFPD), he proposed the original fuel reduction project, and supports the future project components. The chief sees these measures as a resolution to both wildland fuels and structure ignitability issues.

- French Gulch LE-38 Project – French Gulch Road runs along a ridge between the communities of Angels Camp and Murphys. This 4.5 mile road contains the Darby and Murphy's Pines Subdivisions, and well as numerous scattered residents. Both subdivisions were devised and built out from the 1960's to the 1980's, and have a road system design allowing only single roadway ingress and egress. In addition, the construction of the homes is prior to ignition resistant building construction standards. Both of these facts jeopardize the approximate 250 structures when wildland fires threaten the area. A targeted fire safe (LE-38) inspection program for this area calls for physical inspection of all structures on and adjacent to the French Gulch Road area. Completion of the first and second inspections is expected by July 1st 2005. Physical inspection of all structures on Pennsylvania Gulch/Skunk Ranch/Ponderosa Roads east of Murphys Ranch is being proposed for 2006.

  Meetings have been held with both Murphys Fire Protection District (MFPD) and Altaville-Melones Fire Protection District (AMFPD) chiefs to advise them of this inspection plan (MFPD and AMFPD encompass the planned inspection areas). Both district chief's were in agreement with the need and the scope of the plan. AMFPD does not have any fuel reduction requirements via local ordinance. MFPD has a weed abatement ordinance within their local fire code that requires clearance of flammable vegetation on parcels ¼ or less. This is enforced on a complaint basis. Agreement was reached to utilize both the CDF LE-38 inspection and MFPD ordinance in conjunction where appropriate, to achieve desired prevention results.

  A meeting was held with the Angels Camp Fire Department (ACFD) Prevention Officer. ACFD has in ordinance a "Resolution for Defensibility of Space and Structures." The resolution encompasses all elements of PRC 4291, and additional fuel management measures. Future land use and development within the City of Angels that can create impact to structure ignitability will be mitigated via fire protection planning measures.

  A meeting was held with the Copperopolis Fire Protection District Chief where structure ignitability issues of concern existing in the Copper Cove and Poker Flat Subdivisions were discussed. CC&R's established in both of these subdivisions require PRC 4291 clearances around all structures, and weed abatement on vacant

lots. Internal compliance is effective and does not require fire service intervention. CFPD does not have a fuel reduction ordinance, or the desire to enact one at this time.

- VIP Patrols – A Volunteer-in-Prevention patrol is utilized to contact citizens in ignition prone areas, providing face-to-face education on equipment caused fires and mitigations.

- Roadside Spraying/Fire Break Project – Fires caused by equipment exhaust on the Calaveras County side of the Parrotts Ferry Bridge have occurred every 5 years over the last 50 years. Due to the extreme canyon slope, the fires have burned between 100 and 2000 acres. Calaveras County Public Works crews will spray herbicide along Parrotts Ferry Road annually, with the request to go as deep as possible from the paved roadway. CDF Fire Crews will construct a 6-foot wide fire break on the north side of Parrotts Ferry Road from the Parrotts Ferry Bridge to a half mile into Calaveras County. CDF Engine Companies will follow up by burning the fuel strip between the fire break and the roadway. This is an annual project that is completed by June 1st of each year.

  State Highway 4 Fuel Elimination Project – In 2004, there were four fire ignitions caused by vehicle exhaust on Highway 4 from the San Joaquin/Calaveras County line and 2 miles into Calaveras County. The 4th of these ignitions resulted in the Copper Complex major wildfire incident, burning 3445 acres. With the assistance of the Copperopolis Fire Protection District, CDF will create a "Black Line" buffer along this stretch of Highway, by burning away the grass from the roadway 20 feet. This shall be an annual project, and will be completed by June 1st of each year.

- Strategic Fire Line Location Plan – This plan/map identifies the locations of fire control lines that have been constructed and used to contain fires in the past, within the Battalion. Other key or recommended fire line locations have been identified on this map as recommended locations to stop wildfires. This historical and "Fire History Experience" can be utilized by firefighters and incident command teams in the event of a large fire. This is the single project that is expected to have the most overall positive effect to protect assets at risk in the Battalion.

  It is strongly recommended that the Unit compile this same historical information for all Battalions. This information should be placed on a Unit-wide map for utilization by firefighting personnel on "going" incidents, and as a planning map for possible placement of fuel breaks extending across Battalion boundaries. All of the mitigation prescriptions within this summary are relative to this issue.

Battalion 13 Plan

Battalion 13 Overview

The West Point Battalion is located in the northeast portion of Calaveras County. The Battalion extends from the 1,600 foot elevation on the west end and rises to 6,800 feet at its eastern boundary. The West Point Battalion is comprised of three (3) Stations. West Point Station, a two (2) engine station is the Battalion Headquarters located in the community of West Point, Esperanza Station, a one (1) engine station located 1 mile east of the community of Mountain Ranch and Hermit Springs Station, a one (1) engine station located 16 miles east of West Point at the 6,000 foot elevation.

Located within the western half of the Battalion are the communities of West Point, Wilseyville, Glencoe, Railroad Flat and Mountain Ranch. Outside of the town sites, the majority of the developed parcels are 5 acres or larger. BLM manages several large blocks of land in the North, South and Liking Forks of the Mokelumne River near the communities of Glencoe, West Point, Wilseyville and Railroad Flat. They also manage large blocks to the north and south of Quiggs Mountain (Sierra Vista Lookout) west of the community of Mountain Ranch and in the Jesus Maria area. The eastern portion of the Battalion is an intermix of private timber lands owned primarily by Sierra Pacific Industries (largest private land owner in Battalion), two (2) small subdivisions (Lily Valley and Upper Blue Creek) and lands administered by the Stanislaus National Forest (STF).

Local government fire protection is provided by three (3) fire districts. Central Fire and Rescue Protection District provides protection to the west end of the Battalion serving the communities of Mountain Ranch, Glencoe and Railroad Flat. West Point Fire and Rescue protects the middle of the Battalion including the communities of West Point, Wilseyville, Lily Valley and Upper Blue Creek Subdivision. Ebbetts Pass Fire District is responsible for the extreme eastern portion of the Battalion.

The Battalion contains a sizeable portion of the Mokelumne River watershed and is headwaters for the North Fork of the Calaveras River. The northern boundary of the Battalion is the North Fork of the Mokelumne River. The Battalion is dissected by the Middle, Licking, and South Forks of the Mokelumne River and the North Fork of the Calaveras River. Several other smaller tributaries and drainages also dissect the Battalion. It is not uncommon to experience wind events within the Battalion. The Battalion routinely experiences east and north wind events at the higher elevations. These events have materialized with no previous warning. The forks of the Mokelumne River have also shown a history of significant east wind events. This is a local phenomenon to this area. Of course, the Battalion is also susceptible to the general north and mono wind events as with the rest of the unit.

It is not uncommon to experience relative humidity levels in the low teens from the middle of September until the rainy season in the upper elevations. During the normal summer at the end of extended heat waves, the Battalion does not receive the beneficial effects from the delta breeze push for a period of about 24 hours after its effects are felt in the San Joaquin Valley and the front county of the Unit. This extends the effects of high hazard weather patterns one day longer than the lower elevations experience.

Battalion 13 Fuels, Assets at risk, Ignition and Fire History Summary

The majority of the Battalion has been categorized and rated within the very high fire danger rating. Historically the Battalion was primarily timber land with the western portion a ponderosa pine dominated stand transitioning at the higher elevations to a fir and lodgepole pine dominated stand. The involvement of mankind has changed the balance and mixture of the fuel types in the Battalion. The majority of the Battalion has experienced logging over the past 150 years. The results of these logging practices have changed the historical fuel types from a timber to a brush dominated fuel type at the lower elevations and an intermix of fuel types at the higher elevations. This pattern of logging consistent with land use policies has created a situation where the brush fuel types are intermixed with a timber overstory component. This mixture of fuels creates a highly volatile fuel situation. The brush fuel model is the primary fire carrier and the overstory greatly enhances the spotting potential and flame lengths.

Consistent with the Calaveras County General Plan and Zoning Codes, which are the governing rules for development, smaller parcel size contributes to the limited ability to modify fuels with any degree of success within large geographical areas in the west half of the Battalion. Large private land ownership coupled with federal land in the eastern half of the Battalion afford a far greater opportunity for cooperative projects which are very beneficial to the associated watershed concerns.

In the eastern portion of the Battalion, Sierra Pacific Industries (SPI) is the primary landowner. SPI has instituted a clear cutting methodology as their standard timber harvesting practice. The area is on an eighty (80) year harvest cycle. Most plots are 20 acres in size. SPI initiated the clear-cut process in 1998. The cycle includes harvest, debris removal, then re-planting, generally within a 2-year window.

SPI (formerly Georgia Pacific and American Forest Products), the Stanislaus National Forest (STF), and the California Department of Forestry and Fire Protection (CDF) with the cooperation of Pine Grove Conservation Camp (AEU), have instituted and developed an extensive network of fuel breaks comprising approximately 64.25 miles of completed and proposed breaks. Fuel breaks are typically located on the predominant ridge lines utilizing a 300 foot shaded fuel break methodology, which will total approximately 2,400 acres under treatment. SPI and the STF have commonly used broadcast burning to reduce fuel loading in areas where operationally feasible to mitigate fire risk. The fuel breaks have shown their value during the 2002 wind event and the Winton Fire (Lightning #31) in 1999.

In 2003 Calaveras County established a forest waste collection site located at the County Waste Transfer facility in Wilseyville. Forest and other wood products are collected for chipping and ultimately delivered to co-generation facilities.

There are several assets as risk in the West Point Battalion. Assets include homes and businesses, major timber holdings, watershed values, recreational, historical and archeological sites, electrical power infrastructure and facilities (West Point Powerhouse), and phone lines.

Communities at risk include West Point, Wilseyville, Glencoe, Railroad Flat, Mountain Ranch, Lilly Valley and Blue Creek Subdivision. Zoning laws have allowed fragmented growth throughout the west half of the Battalion resulting in what could best be described as a continuous subdivision with average parcel size of five (5) acres.

The communities within the Battalion will be characteristically classified as old communities. The majority of the development within the community areas is vintage 1940's to 1960 and one can deduce are primarily wood frame construction. As the communities continue to expand, wood frame remains the primary preference for new construction.

There are minimal subdivisions within the Battalion that can be classified as modern and high density. The primary reason for this is the current General Plan and associated zoning requirements.

The watershed values in the Battalion supply water to the East Bay Municipal District, Stockton East Water District, Calaveras Public Utility District and the Calaveras County Water District. The Mokelumne River watershed is the water source for Tiger Creek, Pardee and Camanche Reservoirs and primary water source for the East Bay Municipal Utility District (EBMUD). The South Fork and Licking Forks of the Mokelumne are the primary water sources for Calaveras Public Utilities District (CPUD) with their intake just south of the confluence of the South and Licking Forks where water is pumped into Jeff Davis Reservoir located in the Railroad Flat area. The North Fork Calaveras River is a primary water source for New Hogan Reservoir. Calaveras County Water District and the Stockton East Water District (SEWD) utilize New Hogan for water storage and delivery. Calaveras County Water District (CCWD) utilizes the Bear Creek and Forest Creek Drainages.

There are various water delivery systems within the Battalion. Calaveras County Water District services the West Point and Wilseyville area. Calaveras Public Water District services the communities of Railroad Flat and Glencoe. The community of Mountain Ranch has a single storage tank and hydrant located near Senders Market. The balance of the Battalion is serviced by individual wells. With the enactment of PRC 4290, water delivery was addressed by an optional formula. Some residents have chosen to install on-site water tanks; however, the majority of new development has opted to pay an in-lieu Water Enhancement Fee to fund the Calaveras County Water Tender program. On-

site tanks are minimal and there is not currently a system to guarantee functionality of the existing tanks.

The Battalion has averaged 24 fires during the past 7 years. If one only looks at man caused fires, the number is reduced to an average of 21 fires per year. Fires which occur during the "non-fire season declaration" are not reflected in the Statistical reporting. As with most mid-elevation Battalions, the Battalion experiences a number of debris burn escapes into the vegetation during the dry periods normally occurring during the winter period.

Vehicle fires account for the majority of the fires in the Battalion at approximately 17%. Miscellaneous is the next highest start rate with 13%. Due to statistical balance on starts, there is not one significant area to target and we will continue an overall strategy of public education and school programs.

As with all Battalions in TCU, the West Point Battalion has had its share of large and damaging fires. Historical fires include:

- The Moore Fire (2001) located in Moore Creek on the No. Fork of the Mokelumne River burned approximately 579 acres of timber.
- The Leonard Fire (2001) burned onto the western boundary of the Battalion burning approximately 5,188 acres.
- The Harley fire south east of Wilseyville which began on April 1, 2000 burned approximately 158 acres of timber.
- The Winton Fire (Lightning #31) (1999) 6 miles east of West Point which burned approximately 114 acres of timber.
- The Lightning #14 fire (1996) in the Swiss Ranch area burned approximately 2,647 acres.
- The Old Gulch Fire (1992) burned on the southern boundary of the Battalion south of Mountain Ranch burning approximately 17,419 acres.
- The Railroad Flat Complex (1988) consisting of the Bridge (6,690 acres) and Mason (4,050 acres) fires located to the East of Railroad Flat and Mountain Ranch burning a total of 10,740 acres.
- The Forest Creek Fire (1959) located 10 miles east of West Point burned approximately 528 acres of timber.
- The Battalion has experienced an additional 27 "Large Fires" since 1918 ranging from 5 to 1,748 acres.

Battalion 13 Prescriptions

Fuel breaks are the main mitigation measure used to modify fuels in Battalion 13. The largest land owners on the east side of the Battalion are SPI and the USFS. Both of these landowners have partnered with CDF to develop an extensive fuel break system to help protect the valuable timberland and watershed in this area. These fuel breaks are part of the Calaveras Tuolumne Fuel Break System.

The proposed fuel break system is primarily a ridge top dominated system. The current concept is to use shaded fuel breaks. Several portions have been previously established. Continuation to incorporate the private landholding, particularly when land is under a current THP, will expedite the completion. Ongoing maintenance of the existing portions will become an issue as time progresses. A VMP agreement is suggested to accomplish this goal.

The proposed and current fuel breaks cover a distance of approximately 64.25 miles. Factoring a shaded fuel break of 300-foot average width, the total acreage under prescription will be approximately 2,400 acres.

Proposed/current Fuel breaks are listed below (shown in miles):

- Winton Road Fuel Break (14.25 miles)
  - Sierra Pacific 14.25
  - Stanislaus NF 5.25
  - Private 1.50

- Schaads Fuel Break (5.25 miles)
  - Sierra Pacific 4.25
  - Stanislaus NF 0.50
  - Private 0.50

- Bailey Ridge Fuel Break (14.75 miles)
  - Sierra Pacific 9.00
  - Stanislaus NF 5.75
  - Private 0.00

- West Blue Fuel Break (9.75 miles)
  - Sierra Pacific 8.20
  - Stanislaus NF .30
  - Private 1.25

- Blue Mtn. Road/Buck Ranch Fuel Break (15.0 miles)
  - Sierra Pacific 13.25
  - Stanislaus NF 1.50
  - Private 0.25

- Blue/Moore Fuel Break (5.25 miles)
  - Sierra Pacific 3.75
  - Stanislaus NF 1.25
  - Private 0.25

- West Blue #1 Project – This is a cooperative project between CDF, Sierra Pacific Industries (SPI) and local landowners. There are 2 main objectives of the project. First, to construct a fuel break on the ridge that extends westward from Blue Mountain. This fuel break is part of the Calaveras-Tuolumne Fuel Break Project.

Second, to reduce fuels on wildland adjacent to existing structures in the project area. About 100 of the 370 project acres have been treated to date.

- Winton Road Roadside Fuel Reduction Project – This is a cooperative project between CDF Sierra Pacific Industries (SPI), local land owners and the Stanislaus National Forest. The road is owned by Sierra Pacific Industries. There are 2 main objectives of the project. First is to reduce the fuels availability immediately adjacent to the main forest road utilized by the public and the logging industry. Second, the reduction in fuels will dramatically improve sight distance for vehicle travel. Winton Road is the primary response road for the Hermit Springs FFS. Providing this clearance will greatly enhance the safety of CDF Personnel, the logging industry and the public.

- The Stanislaus National Forest (STF) will be continuing work on lands within their ownership on the Moore/Blue and Winton Fuel Breaks. They also have thinning and under burning plans for the Moore and Blue Garnet timber sales. Future efforts by the STF will be concentrated within the WUI areas in Battalion 14 and minimal effort will take place with the Battalion 13 area.

- The Bureau of Land Management (BLM) currently does not have any projects scheduled for their lands within the West Point Battalion. They are currently re-writing their fire management plan for the Folsom office.

- Roadside Sign Program – Status: Complete
- School Programs – Status: Done Yearly
- West Point Lumberjack Days – Status: Participate Yearly
- West Point Community Plan/Evacuation Plan – Status: Structure Planning Worksheet/2002; Community Plan/Evacuation Plan proposed
- Wilseyville Community Plan/Evacuation Plan – Status: Structure Planning Worksheet/2002; Community Plan/Evacuation Plan proposed
- Glencoe Community Plan/Evacuation Plan – Status: Structure Planning Worksheet/2002; Community Plan/ Evacuation Plan proposed
- Mountain Ranch Community Plan/Evacuation Plan – Status: Structure Planning Worksheet/2002; Community Plan/ Evacuation Plan proposed
- Lilly Valley Community Plan/Evacuation Plan – Status: Structure Planning Worksheet/2004; Community Plan/ Evacuation Plan proposed
- Blue Creek Community Plan/Evacuation Plan – Status: Structure Planning Worksheet/2002; Community Plan/ Evacuation Plan proposed
- West Point Demonstration Garden – Status: Proposed
- Lynn Park Acres Focused LE-38 – Status: Proposed
- South Rim/Hwy 26 Mokelumne River Focused LE-38 – Status: Proposed
- El Rancho Loma Serena Focused LE-38 – Status: Proposed

Battalion 13 USFS Projects

Table 6: Stanislaus National Forest Calaveras Ranger District completed projects in Battalion 13.

Project	Treatment	Year	Acres	Accomplished	Community @ Risk
Winton Road Fuel break – Active	Thin/Mechanical /Rx Fire	2004	205	205	Blue Mt. Estates
Moore Creek	Thin/Mechanical /Rx Fire	1996	986	446*	NA
Bellfour	Thin/Mechanical /Rx Fire	1996	745	745	NA
Castle	Thin/Mechanical /Rx Fire	1998	190	183*	NA
Interface	Thin/Mechanical /Rx Fire	1998	327	327*	NA
Blue Garnet	Thin/Mechanical /Rx Fire	1999	577	577*	NA
Pumpkin	Thin/Mechanical /Rx Fire	1999	205	205	NA
Moore/Bellfour	Rx Fire	2000	2937	431*	NA
Winton Road Fuel break**	Thin/Mechanical /Rx Fire	1996	245	245	NA
Blue Mt. Fuel break	Thin/Mechanical /Rx Fire	2004	75	75	NA

* - Projects still active.
* - Total fuel break is 450 acres

Battalion 13 – Committees of Calaveras Healthy Impact Products Solutions

The Committees of Calaveras Healthy Impact Products Solutions (CHIPS) is a coalition of organizations and individuals from the West Point, Wilseyville and Rail Road Flat areas that are looking into the feasibility of using wood waste in ways that could provide jobs, reduce energy costs and improve safety for area residents. Members of the coalition include the Calaveras County District 2 Supervisor, Calaveras County Mountain Mi-Wuk Tribal Council, Sierra Pacific Industries, BLM, Calaveras Band of Mi-Wuk, Mother Lode Job Training, Calaveras Foothills Fire Safe Council, Foothill Conservancy, and Sierra Nevada Forest Protection Campaign. The wood waste would come from the Wilseyville solid waste transfer station, residual timber harvest debris, and forest wildland fuel reduction efforts. It is hoped that this program would provide jobs, reduce energy costs and improve the safety for local residents.

The committees are currently working on feasibility studies for four options that include the production of electrical energy, mulch and chips, fence posts and wood pellets. The study regarding generation of electricity would include investigating the viability of

building a cogeneration plant in the study area to provide cheaper energy to local residents. The other options would provide much needed jobs for local forest industry workers whose job market has dwindled over the last decade. All of the options help dispose of the forest waste generated though wildland fuel reduction efforts in the area.

Battalion 14 Plan

Battalion 14 Overview

The Arnold Battalion consists of 136,520 acres in the southeast portion Calaveras County, as well as a significant portion of northern Tuolumne County. The Battalion includes a wide geographic area, with elevations ranging from 1400 to 6800 feet and is bisected by multiple east-west drainages that have a history of supporting fire spread. The Battalion is comprised of two stations, Arnold and Skull Creek, and a lookout, Blue Mountain, which is not currently funded for staffing. The Arnold Forest Fire Station is a two (2)-engine station that serves as the Battalion headquarters. The Skull Creek Forest Fire Station is located south of Big Trees State Park (BTSP) in a remote area of Tuolumne County.

The major communities in the Battalion are Hathaway Pines, Avery, Arnold, and Dorrington; there are no incorporated cities. The Arnold/Dorrington area is one of the most densely populated communities in the county, as there are over 6000 structures in the immediate vicinity. Fortunately, most of these structures are located within established subdivisions. However, there are also many homes and cabins located outside subdivisions on larger parcels, ranging from 1-40 acres in size. Much of the land in the eastern portion of the Battalion is an inter-mix of commercial timberlands owned by Sierra Pacific Industries or the Stanislaus National Forest. Most National Forest lands within the Battalion are protected by CDF under an inter-agency fire protection agreement. Local government fire protection is provided by the Ebbetts Pass Fire Protection District, which has four stations, two of which are staffed with full-time firefighters.

In addition to providing protection to life and private property, the Arnold Battalion provides resource protection for critical watershed, timber, and recreational values. The Battalion protects portions of the Calaveras, Mokelumne, and Stanislaus river watersheds. The streams feeding the Calaveras River provide the primary water source for New Hogan Reservoir. The Mokelumne River watershed provides water to Tiger Creek, Pardee and Camanche Reservoirs and is the primary water source for the East Bay Municipal Utility District. The Stanislaus River supplies water to New Melones Reservoir and Tulloch Reservoir. Protection of these watersheds provides benefits that reach far beyond the boundaries of the Tuolumne-Calaveras Unit. The commercial timberlands in the Battalion support an active logging industry that plays a vital role in the local and state economy. Most importantly, the scenic beauty of the area supports a

vibrant local tourism industry that caters to all types of outdoor enthusiasts. The Battalion also protects Big Trees State Park, a highly visited park that supports magnificent groves of Sierra Redwoods.

The majority of the Battalion has been designated by CDF as having a Very High Fire Danger Rating. It has also been categorized as having a High Fire Hazard rating by the United States Forest Service (USFS). Fuels in the Battalion range from dense stands of mature brush mixed with oak woodlands at the lower elevations, mixed conifer forests dominated by ponderosa pines in the mid-range elevations and fir and lodgepole pine dominated stands at the upper elevations. Fuel Models 1 (grass), 2 (oak woodland), 4 (heavy brush), 6 (medium brush), and 10 (heavy timber) are all present. This mixture of fuels creates a highly volatile fuel situation and can support extreme fire behavior. During the normal summer heat waves, the Battalion receives the beneficial effects from the delta breeze about 24 hours after its effects are felt in the San Joaquin Valley and the lower portions of the Unit. In the upper elevations of the Battalion, it is not uncommon to experience relative humidities in the low teens from the middle of September until the rainy season. Correspondingly, 10-hour fuel moistures can stay below 5% for much of the fall. The Battalion frequently experiences East and North Wind events at the higher elevations. During these events, high winds coupled with low humidities develop with little or no warning. The Mokelumne and Stanislaus River drainages typically come under the greatest influence from these events and in recent years there have been several large fires that have occurred after the close of fire season.

Other than lightning, there is no consistent and statistically significant fire cause in the Battalion. County General Plan and Zoning Codes are the governing rules for development, and small parcel sizes limit the ability to modify fuels with any degree of success within populated areas of the Battalion. Large private land ownership (SPI) intermingled with USFS lands provides greater opportunity for cooperative fire prevention projects. As a result, the most effective fire prevention effort should be a two-pronged approach, focusing on the following areas; maintaining defensible space around homes and developing a network of fuel breaks around the most densely populated areas. This approach serves a twofold purpose in that it protects homes from encroaching wildfires and protects wildland areas from fires starting in adjacent subdivisions.

Battalion 14 Fuels, Assets at risk, Ignition and Fire History Summary

The majority of the Battalion has been designated by CDF as having a Very High Fire Danger Rating. It has also been categorized as having a High Fire Hazard rating by the USFS. Fuels in the Battalion range from dense stands of mature brush mixed with oak woodlands at the lower elevations, mixed conifer forests dominated by ponderosa pines in the mid-range elevations and fir and lodgepole pine dominated stands at the upper elevations. NFFL Fuel Models 1, 2, 4, 6,and 10 are all present. This mixture of fuels creates a highly volatile fuel situation and can support extreme fire behavior.

There are multiple assets at risk within the Battalion, with the most obvious being life and property. The following list reflects those assets that should be considered when considering pre-fire management activities in the Battalion:

- Life safety
- Residential structures, commercial development, and associated infrastructure, including roads, flumes, water tanks and storage facilities, power and telecommunication systems, and hydro-electric facilities structures
- Big Trees State Park
- Watershed Protection
- Timber values
- Recreation values
- Cultural and other resource values
- Grazing/Agricultural values

Structures in the Battalion's older subdivisions are at significant risk due to non-Fire Safe construction practices. Poor location and design features such as shake roofs, wood siding, wooden decks, and large single pane windows are common in these areas.

The Ignition Management Analysis shows that the Battalion averages approximately 28 ignitions per year. When lightning is factored out, the average drops to 25 fires per year. The major causes, excepting lightning, are miscellaneous, vehicle, and debris burning. Over the past seven years, there has been a steady decline in the number of escaped debris burns and this trend can be attributed to the early suspension of burning permits due to fire conditions. Over the past seven years, an average of 2,188 acres has burned in the Battalion each year. This number is skewed due to the Darby fire of 2001 and the Armstrong #1 (Mineral) and #2 fires of 2004. Factoring out these large fires, an average of 10 acres are burned in the Battalion each year.

Despite the relatively low number of ignitions and acres burned that occur on an annual basis, the Arnold Battalion has a history of large and damaging wildfires, most recently evidenced by the Armstrong #1 and #2 (2004), Sourgrass (2002), Darby (2001), and Gulch (1992). In many cases these fires originated in the low country Battalions and have spread eastward through the drainages that dominate the topography of Calaveras and Tuolumne Counties. These fires have been terrain and fuel driven and containment has occurred primarily due to changes in fuels, topography or moderation in weather conditions. In other instances, large and damaging fires have occurred in response to wind events in the Mokelumne and Stanislaus River drainages. Several of these fires have occurred after the close of fire season, so their acreages are not included in the statistics provide in this analysis.

Battalion 14 Prescriptions

- Fuel Breaks – A network of fuel breaks has been completed in cooperation with the Stanislaus National Forest, Big Trees State Park, and Sierra Pacific Industries. Due to the fact that CDF does not control these lands, our role has been limited to providing technical advice regarding the location of these fuel breaks and

assisting with the incorporation of private parcels into existing projects. To date, cooperative fuel breaks have been constructed around the western portions of Lakemont Pines, Hathaway Pines, and the McKay's Road area. These efforts will provide protection to homes in these areas. Planned future projects are listed below:

- Love Creek Ranch Fuel Reduction Demonstration Project – In 2003, TCU staff applied for and received a USFS grant of $54,000 to partially fund a demonstration fuel reduction project on the Love Creek Ranch near Avery. This is a cooperative project between CDF, the Stanislaus National Forest, the Ebbetts Pass Fire Protection District, and the landowner, Mr. David Alford. The goal of the project is to improve the network of fire defense improvements in the Arnold area. The project is immediately adjacent to a fuel break constructed by the Stanislaus National Forest and will further increase the buffer of treated lands between National Forest lands and concentrations of rural subdivisions. The existing fuel break is part of the Calaveras-Tuolumne Fuel Break System that was used to contain the Darby Fire in 2001.

  Because of its proximity to numerous forest subdivisions, the project will provide an opportunity for the public to view the effects of the mechanical removal of biomass fuels for the reduction of fire hazards. It will also provide employment to logging contractors who have experienced a significant reduction in employment opportunities as a result of declining timber harvest levels in Calaveras County. All forest biomass removed from the 120 acre project area will be utilized for the generation of electric energy. Planning for this project has started and bid proposals will be solicited in the spring of 2005. It is anticipated that work will begin in July 2005, and be completed in the spring of 2006.

- Big Trees Village Fuel Break – A fuel break around the southeast side of the Big Trees Village is in the planning stage. This would be a cooperative project with Sierra Pacific Industries, CDF, and the Big Trees Village Homeowners Association. The purpose of the project would be to reduce fuels along the subdivision boundaries in order to slow fire spread into and out of the development.

- Moran Road Fuel Break – A fuel break along the ridge that separates Moran Road and Love Creek would provide additional protection to the more densely populated portions of the Battalion. CDF would like to improve control lines constructed during the Darby fire and maintain them as part of the overall fire protection network. A fuel break in this area is in the discussion stages with CDF, SPI, and private landowners.

- The CCWD 2002 WUI Grant Project – This project reduced the fuels on approximately 50 acres of Calaveras County Water District (CCWD)

property, west of Arnold. The analysis process of the California Fire Plan identified this area to have high wildland fire hazard/risk. This project was designed to extend existing fuel break work completed on adjacent USFS land, and helped reduce the wildfire threat on the western side of Arnold. Another fuel break, which is currently in the planning stages on the opposite side of Highway 4, will tie this project to existing fuel breaks on the south and eastern boundary of Arnold. The ultimate goal is to modify the fuels around the entire Arnold community to help firefighters protect this area from wildfires. This project also borders a mobile home park and the community of Avery. Fuels were cleared to form a 100-200 foot buffer adjacent to these areas.

TCU received $25,900 from a USFS WUI grant in 2002 to provide funding for operational support for CDF fire crews to manually cut, pile and burn the heavy fuels on approximately 50 acres adjacent to homes on the CCWD property. These treatments were done to shaded fuel break standards. This work ties in with planned and existing fuel breaks on adjacent USFS and private property. The original grant proposal planned for mechanically treating 30 acres and using crews on 20 acres. In comparing areas treated by crews to those treated mechanically, crews leave very little residual fuel debris. With that in mind, TCU Pre-Fire staff decided to use crews on the entire 50 acres.

Crews from Vallecito Conservation Camp began working on this project in the fall of 2002 and completed the cutting and piling portion of the project by June 30, 2003. The piles that crews were not able to burn prior to the start of the 2003 fire season were burned after fire season.

Problems that were encountered while implementing the project include: snow, which kept crews out of the project area for two weeks around the Christmas and New Years period; and the air pollution district having declared many No Burn days, which slowed the disposal of the debris.

- Calaveras State Park 2001 WUI Grant Project – The Calaveras State Park 2001 WUI Grant Project is a joint project between CDF and Calaveras Big Trees State Park. This project reduced dense forest understory vegetation on approximately 117 acres of state park land adjacent to homes on the eastern edge of the Arnold community. Both CDF and California Conservation Corps (CCC) crews manually cut, piled and burned the dense vegetation in the project area. The grant funds paid for the work performed by the CCC crews. The CDF crew and state park staff time was used to match the grant funds.

  The CCC and CDF fire crews began working on the Calaveras State Park Project during the 2001-2002 winter. The original grant period was scheduled to end June 30, 2002, but TCU Pre-Fire Management personnel filed to extend the grant period to June 30, 2003 due to the problems mentioned below. The project was

completed on schedule at the end of the extended grant period. The entire $77,400 grant award was spent on the project.

Several problems were encountered during this project including:

- Calaveras Big Trees State Park representatives were unsure if the funds that were to be used for their grant match were going to survive department budget cuts.
- Due to the busy 2001 fire season, both the CCC project coordinator and the CCC crews were committed to fires until the fall, and were unable to prepare the contract and start work on the project. Because of this fact, work did not begin on the project until March 2002 and there was not enough time to finish the project by June 30, 2002. State Park representatives requested an extension of the grant period to June 30, 2003.
- Winter snow affected the scheduling of CCC crews on the project. Allowing the extra year for the project ensured its completion.

- Structure Protection Plans – Plans have been developed for all developed community areas within the Battalion, identifying hazards, topography, evacuation routes and tactical information.

- LE-38 Inspections – Removing fuels around structures provides the single most effective action for increasing structure survivability during a wildfire. An aggressive inspection program can provide firefighters with defensible space for structure protection operations. Utilize VIP assistance to continue a vigorous home inspection program. Work with the media in developing community awareness of LE-38 program and its benefits. Application has been made to obtain a grant to hire full-time inspectors during the spring of 2005.

- Evacuation Planning – Develop a Battalion evacuation plan outlining evacuation routes, facilities, agency contact numbers and fire prevention tips. Application has been made for a grant to fund this project.

- Fire Prevention Signs – Post fire prevention signs year-round, to better educate the public on fire hazards and methods of prevention. Messages will target causes identified in the ignition management analysis.

- Burn Permit Administration – Provide fire prevention education materials and positive agency contact with each permit, explaining fire safety tips.

- School Fire Prevention Programs – Support school fire prevention programs in Battalion in order to increase fire safety education and awareness.

- Ensure that County building and public works officials enforce the appropriate County ordinances that which have been adopted as functional equivalents to

PRC 4290, with regards to water supply, road standards, signage, and fuel modification.

- Enforcement of laws relating to wildland fire, including prosecution of arson type fires.

- Cite all power line clearance violations.

- Encourage all campers to obtain campfire permits.

- Encourage County public works agencies and others to clear vegetation within designated road right-of-ways.

- Encourage Fire Safe Construction Methods – CDF needs to work with local elected officials and encourage them to adopt codes and ordinances that require Fire Safe construction practices. Codes that exceed the requirements of PRC 4290 should be encouraged; i.e. prohibition of shake roofs and requirements for fire resistive siding. Further, the county should encourage education on fire safe construction practices whenever a homeowner remodels or substantially improves their structures.

- Increase inspections and enforcement of fuel reduction regulations on improved and vacant parcels.

- Encourage homeowners to voluntarily utilize Fire Safe recommendations with regards to ladder fuels and crown separation.

- Restore funding of lookouts. The loss of Blue Mountain Lookout staffing reduced CDF's ability to quickly detect wildfires and dispatch appropriate resources. Restoration of these positions would improve CDF's early detection abilities.

Battalion 14 Cooperators Projects

United States Forest Service, Stanislaus National Forest Projects

The Calaveras Districts' fuel treatment strategies are designed to reintroduce fire, reduce fuel levels, and mitigate the consequences of large damaging wildfires. These strategies allow managers to set priorities that protect fire fighters, the public, property, and natural resources. In general, landscape level fuel treatment strategies are designed to limit wildfire extent, modify fire behavior, and improve ecosystems. Fire and fuel management relies on a combination of strategies for modifying wildland fire behavior, achieving Fire Management Plan goals, and re-introducing fire across broad landscapes:

- Strategically placed area treatments

- Defensible fuel profile and fuels reduction zones adjacent to communities and areas of high value
- Wildland Fire Use

Fire managers will use these strategies for prioritizing projects over the entire Forest to eventually determine priority areas for fuel treatment. The fuel management goals include:

- Protect life and property in the wildland urban intermix (WUI) zone
- Provide for firefighter and public safety
- Improve Forest health and fire resiliency
- Reduce fire severity and level of resource damage
- Adhere to the directions, standards, and guidelines in the Land and Resource Management Plan
- Protect sensitive habitat

Since 1992, 9056 acres have been treated in WUI areas and 7058 remain to be completed on existing projects. An additional 760 acres have been treated in non-WUI areas. The District has 5328 acres in the implementation stage, scheduled for FY 2005-07 and an additional 8650 acres in the planning stage.

Table 7: Stanislaus National Forest Calaveras District completed projects in Battalion 14.

Project	Treatment	Year	Acres	Accomplished	Community @ Risk
Stanislaus Steamer	Rx Fire	1992	600	600	Hathaway Pines/Avery
North Calaveras Fuel break	Mechanical/Rx Fire	1993	57	57	Arnold
McKays I	Rx Fire	1993	600	600	Love Creek/Arnold
Miscone Hill	Rx Fire	1993	600	600	Hathaway Pines/Avery
Summit Level Biomass	Thin/Mechanical/ Rx Fire	1995	18	18	White Pines
McKays Biomass	Mechanical	1995	84	84	Love Creek
McKays II	Rx Fire	1995	600	600	Love Creek/Arnold
Viper Mechanical	Mechanical/Rx Fire	1997	850	850	Avery/Arnold/Hatha-way Pines
Beaver Creek	Rx Fire	1997	1400	1400	Love Creek/Arnold
Big Trees Coop	Rx Fire	1997	85	85	Arnold/Love Creek
Cupid	Mechanical	1998	189	189	Avery/Arnold
O'Manuel	Thin/Mechanical/ Rx Fire	2002	1314	1314	Avery/Arnold
Domingo Fuel break	Mechanical	2002	52	52	Hathaway Pines/Avery
Domingo Shred	Mechanical	2002	623	623	Hathaway

Project	Treatment	Year	Acres	Accomplished	Community @ Risk
					Pines/Avery
Lake Alpine	Mechanical/Rx Fire	2002	25	25	Lake Alpine
O'Manuel Mechanical	Mechanical/Rx Fire	2003	660	660	Avery/Arnold
O'Manuel Hand pile	Mechanical/Rx Fire	2003	141	141	Avery/Arnold
Corners	Thin/Mechanical/ Rx Fire	2003	101	101	Hathaway Pines/Avery
Skeleton	Mechanical/Rx Fire	2003	126	126	Avery/Arnold/Hatha-way Pines
Brown Darby	Salvage/Mechanical/Rx Fire	2003	804	804	Avery/Arnold/Hatha-way Pines
Wuu-eee	Mechanical/Rx Fire	2003	34	34	Avery/Hathaway Pines
Irish	Thin/Mechanical/ Rx Fire	2004	1306	1271*	White Pines/Arnold
Leftover Machine	Mechanical/Rx Fire	2004	485	205*	Love Creek/Arnold
Leftover Hand pile	Mechanical/Rx Fire	2004	24	5*	Avery/Arnold/Hatha-way Pines
Big Love	Thin/Rx Fire	2004	347	347*	Arnold/Love Creek
Irish/O'Manuel Rx	Rx Fire	2004	4896	152*	Avery/Arnold/Hatha-way Pines
Manzanita Point	Mechanical/Rx Fire	2004	93	93	Arnold
Edge/McCormick	Mechanical	2004	203	203	NA
Blue Crane	Rx Fire	1999	430	240	NA

* - Projects that are still active.

Table 8: Stanislaus National Forest Calaveras District active and planned projects in Battalion 14.

Project	Treatment	Year	Acres	Community @ Risk	Status
Irish/O'Manuel Rx	Rx Fire	2005-07	4896	Avery/Arnold/Hatha-way Pines	Active
Quartz/Summit Knobs	Thin/Mechanical/Rx Fire	2005-07	432	Arnold/White Pines	Active
Sourgrass	Thin/Mechanical/Rx Fire	2005	650	Cottage Springs	Planning
Highway 4 East	Thin/Mechanical/Rx Fire	2006	8000	Bear Valley/Tamarack	Planning

Western Alpine County

While not part of the Tuolumne-Calaveras Unit's administrative boundaries, Western Alpine County is also within the Arnold Battalion's sphere of influence. The community of Bear Valley has recently become very active in attempting to address fuel accumulations. The homeowners association has retained the services of an RPF and begun treatment on common areas within the Bear Valley Subdivision with the intent of reducing fuel loading. In addition, the public works department has been successful in obtaining an RAC grant to treat fuel along roadways, improving vehicle access and evacuation routes. It is expected that the community will become more active in the future in attempting to obtain additional grants for fire safe projects.

Calaveras Big Trees State Park Projects

The California Dept. of Parks and Recreation (DPR) State Park has an aggressive fuel treatment program aimed at restoring the role of fire in park ecosystems while preserving and protecting the unique features of the park. State Park officials have conducted a number of fuel reduction projects at Calaveras Big Trees State Park. The largest single project was a 115-acre fuel break constructed along the boundary shared with Blue Lake Springs subdivision and on the ridge forming the upper watershed boundary of Moran Creek. Most of the other related projects conducted in the park are aimed at restoring forest stand conditions to reflect a natural fire regime, although the end results are essentially the same as a specific fuel reduction/fuel break project. This allows DPR to contribute to the effort to create a fire safe community, while also meeting its responsibility to preserve natural systems within the park. Additional projects include 45 acres treated (as part of a black oak woodland restoration project) along the ridge connecting Blue Lake Springs and Big Trees Village subdivisions, three separate projects to thin understory trees and reduce ground fuels along the Highway 4 Corridor through the park, (approximately 80 acres), and an ongoing effort to restore the forest community of the South Grove Natural Preserve. In addition, approximately 45 acres of several smaller projects have been conducted to reduce fuel loadings that are particularly heavy, but that are not necessarily part of a strategic plan. The park has also been awarded a grant to treat 70 acres along its boundary between Big Trees Village subdivision. This project will provide valuable protection both the park and the subdivision from encroaching wildfires.

Sierra Pacific Industries Projects

As the largest single landowner in the Battalion, Sierra Pacific Industries (SPI) is an obvious partner for collaborative projects. Currently, CDF is encouraging SPI to conduct additional thinning operations along the boundary of the Big Trees Village subdivision and on additional parcels near Moran Road and Love Creek areas.

Ebbetts Pass Fire Protection District Projects

The Ebbetts Pass Fire Protection District (EPFPD) has been a supporter of CDF's fuel reduction plans. In addition, the District has an ordinance requiring fuel modification on unimproved parcels on a year-round basis. This ordinance is especially important to CDF, as it has no legislated authority to enforce fuel reduction on unimproved parcels.

Calaveras County Fuel Waste Program

Disposal of forest fuels has been made much easier for local residents, thanks to the County's Fuel Waste Disposal program. Under this program, homeowners may take all unwanted yard debris (brush, grass, pine needles, etc.) to local transfer stations and dump these materials at no charge. The program has been very successful in encouraging compliance with fuel reduction around structures while improving air quality.

Forest Meadows Homeowners Association Projects

The Association has successfully applied for a grant through the California State Fire Safe Council to prepare a wildfire protection plan for their area. Grant funds will support the preparation of the plan and the subsequent fuels management. The plan will examine vegetation conditions, terrain, and climatic influences within the development and on appropriate adjacent lands. It will also address the impact of infrastructure (roads, trails, utility corridors, etc.) on fire behavior and examine the response situation. The plan will be prepared in close collaboration with appropriate agencies, special districts, and other concerned parties. Matching support will be provided by the Association through the provision of project management, conduct of public meetings, and continuation of an existing program of roadside and easement fuels treatments. Any treatment activities will be done under a CEQA analysis in order to ensure compliance with environmental regulations. For priority areas on adjacent lands, cooperative management would be attempted utilizing other sources of funds such as CFIP for private lands and normal budgeting or grants for federal lands.

The Association is also working with Firewise Communities/USA to develop a community assessment for preserving wildland living aesthetics while providing residents with protection from wildland fire. Under this program, community residents implement the issues and solutions identified in the Firewise assessment. It is hoped that this grass roots approach will result in greater participation from members of the community.

Love Creek Homeowners Association Projects

Like Forest Meadows, the Love Creek Homeowners Association is also working with Firewise Communities/USA to develop a community assessment for preserving wildland living aesthetics while providing residents with protection from wildland fire. The objectives of their plan are the same as those identified above.

Calaveras County Fire Safe Council

The local Fire Safe Council has been very active in the County and Battalion. A complete discussion of their activities is included in a later section of this plan.

Battalion 15 Plan

Battalion 15 Overview

Battalion 15 covers the area from the Battalion 12 and 14 boundaries on the north and west, O'Byrnes Ferry Road, Highway 120 and the Tuolumne River on the south, and just east of the communities of Tuolumne City, Twain Harte, Mi-Wuk Village and Long Barn. The elevation ranges from about 550 feet at the O'Byrnes Ferry bridge on the west side to over 5,100 feet on the east. The population center for the Battalion is on the Highway 108 corridor from Jamestown to Long Barn. The main communities in the Battalion are Jamestown, Sonora, Columbia, Tuolumne City, Twain Harte, Mi-Wuk Village and Long Barn. Ranching, tourism, recreation and small businesses are the main source of revenue in this area. The Sonora area has many major retail stores in addition to the small businesses. Many vacation homes exist in the upper Highway 108 corridor and this leads to increased population in the Battalion during the summer and holiday periods. The Jamestown, Sonora City, Columbia, Tuolumne, Twin Harte and Mi-Wuk Fire Districts are within Battalion 15. Although the Strawberry Fire District is outside of the Battalion 15 boundary, the CDF Battalion chief on duty will usually respond to emergency calls within this district. All other local government fire protection in the Battalion is provided by the Tuolumne County Fire Department, which is administered by TCU. The Sonora (2 engines) and Twain Harte (1 engine) CDF FFS are within this Battalion. The Sonora station serves as the Battalion headquarters.

Battalion 15 Fuels, Assets at risk, Ignition and Fire History Summary

Much of this Battalion is classed as very high fire danger rating. Fuel models range from grassland and oak woodland with scattered brush fields in the western portion of the Battalion to brush and timber in the east. Each of the thirteen Fire Behavior Prediction System (FBPS) fuel models are represented in the Battalion, with fuel models 1 (short grass), 3 (tall grass), and 4 (chaparral) dominating.

Battalion 15 contains the greatest amount of populated areas in the unit and has a significant density of Wildland Urban Interface (WUI) classified area, thus the Battalion correspondingly experiences a high number of ignitions and unwanted fire annually. If history is any indication, as population and development continue to rise, the Battalion will see a parallel increase in fire activity.

The Highway 108 Strategic Planning Group was formed to plan and coordinated pre-fire management activities on the Highway 108 corridor and serve as the strategic arm for the Highway 108 Fire Safe Council. Members of this group are from local, state, and federal agencies (fire and non-fire protection), industry and local government. This group operates using the same concept as the SWIFT Project in Battalion 16. The experience and expertise of participating agencies and groups involved has resulted in better project identification, coordination and implementation. This group is working hand-in-hand with the Highway 108 Fire Safe Council by providing strategic planning and guidance where appropriate.

Battalion 15 assets at risk include all communities along the Highway 108 corridor including Jamestown, Sonora, Columbia State Historic Park, East Sonora, Phoenix Lake, Crystal Falls, Mono Vista, Tuolumne City, Twain Harte, Cedar Ridge, Big Hill, Mi-Wuk Village, Sugar Pine, Sierra Village, Confidence, Long Barn, Cold Springs, Pinecrest, and Strawberry. Also included in and adjacent to these communities are numerous subdivisions and housing developments. These communities represent a very large life hazard from the threat of wildfire. Significant commercial and economic base for Tuolumne County is located within this Battalion. Other assets at risk include the timberland, watershed, recreational values, grazing/agricultural, and other scenic tourism assets.

From 1998 to 2003, an average of 129 fires burned each year for a total of 65 acres annually. Ignitions from debris burning have been in steady decline since a high of 19 in 1998 to a low of 6 in 2002. In 2003 there was an increase in debris burning escapes to 10 from the previous year. This documents the effectiveness of CDF placing a burn ban in effect during the fire season. Other ignition trends indicate moderate success in preventing fires from equipment use. Vehicle caused ignitions have remained high over the years, which appears to be consistent with the high volume of vehicular traffic on the main roadways within the Battalion.

In 2004, there were 128 fires in the Battalion. In reviewing the specific causes for these fires, there appeared to be an increase from last year in three areas (arson, electrical, and undetermined). There was a significant reduction in debris burning from 2003 which is most likely a result of the CDF burn ban being placed into effect on May 10, 2004. Vehicle fires represented the highest cause for fire starts in the Battalion. The largest fire occurred July 14, 2004 on the Rosasco Ranch and burned 245 acres. The fire cause was equipment use.

The Battalion has a long history of large damaging fires since accurate records were begun after World War II. Historical fires are included in the table below. Seventy five percent of these large damaging fires occurred between mid June and Mid August. The table below shows many of the large fires that have plagued the Battalion.

Table 9: Battalion 15 Large Fire History

Year	Start Date	Fire Name	Acreage
1951	8/13	Sierra Railroad	643
1951	7/22	Buzzard	534
1952	7/24	Jacobs	430
1954	9/7	Rosasco Escape	435
1958	7/12	Hayward	549
1959	7/16	Parrotts Ferry #2	313
1961	7/25	Browns Flat	1336
1963	9/26	Rotelli	363
1964	8/10	Emerson R.I.Escape	2881
1967	6/29	Montezuma	781
1974	9/29	Kanaka	1880
1979	6/16	Peoria	491
1982	7/27	Keystone	3500
1987	9/1	Paper	4339
1988	6/26	Lightning #84	1006
1989	9/6	Tuttletown	632
1994	7/18	Parrotts	767
1994	8/9	Creek	1434
1995	7/16	Peoria	3660
1996	8/12	Lightning #40	3345
1999	7/14	Caylor	110
2004	7/14	Rosasco	245

Battalion 15 Prescriptions

The following prescriptions have been identified to modify fuel concentrations and buildup in the Battalion.

- Mi-Wuk Fuel Break – The USFS has finished work on the Mi-Wuk Fuel Break on national forest land behind the community of Mi-Wuk. The fuel break has been constructed between the Mi-Wuk Village subdivision and the North Fork of the Tuolumne River. This fuel break extends to the southwest to tie in with the proposed Tuolumne City Fuel Break. A series of prescribed burns are in the planning phase in the Tuolumne River canyon below the fuel break to enhance the fire protection in the adjacent communities.

  The Mi-Wuk/Sugar Pine Fire District received a grant (over $70,000) from the Stanislaus National Forest in 2001 to enter into a contract with the CCC to have crews create a fuel break on portions of private property on the Mi-Wuk Fuel Break. This fuel break section links to USFS fuel breaks that have been

completed on both ends of the project. CDF entered into a VMP agreement with the private property owners to implement the project. This project was completed in 2004 with an additional grant award of $50,000.

- Tuolumne Rancheria Project – The Bureau of Indian Affairs (BIA) and Baseline Conservation Camp crews began work on the Tuolumne Rancheria Project in 2001. The primary objective of this project was to remove heavy fuel concentrations that had accumulated around homes adjacent to and within the perimeter of the Rancheria. It is estimated that over 20 acres have been treated to date. Prior to this project, the BIA had worked on mechanically treating fuels on the property boundary. This project lies within both the Highway 108 Strategic Plan Group and Ponderosa Hills Project area, and an official from the Tuolumne Rancheria is a member of both of these efforts. The Mi-Wok tribe also received funding in 2004 for a chipper unit and has formed a crew of employees to operate the unit within a 15 mile radius of the Rancheria.

- Ponderosa Hills 2004 "RAC" Grant – This grant project awarded $24,000 from the Tuolumne County Resource Advisory Council (RAC) to create a demonstration project fuel break between the Tuolumne Rancheria and the Ponderosa Hills subdivision on a portion of Skyline Drive near Turnback Creek. This project complimented previous mitigation efforts in this area. The Highway 108 Fire Safe Council members coordinated and obtained all agreements with the affected landowners. A categorical CEQA exemption was available and granted by the Tuolumne County Community Development Department on all parcels three acres or less in size. This exemption reduced institutional barriers and aided project managers in attaining a project goal of completing this project in less than forty five days from inception. The goals of this project were to demonstrate a scenic and effective fuel break that is contiguous to the residential structures along Skyline Drive, and to serve as the first phase of a planned fuel break around the west and south-west areas of this subdivision. Due to terrain, mechanical treatment limitations, and an inability to burn on site, hand treatment and chipping was the only alternative available, and thus a high cost ($3000/acre) was realized on this project.

- Greater Twain Harte Fire Safe Program – This $90,000 project was awarded to the Twain Harte Community Services District and the Highway 108 Fire Safe Council in June of 2004 with a goal of improving defensible space within a 21 square mile project area. The project consisted of a cost share arrangement using grant funds to offset the costs of transporting yard debris generated from homeowners complying with PRC-4291. A central collection facility and periodic tub grinding operation was established off Plainview Road (old Twain Harte dumpsite) at the west entrance to Twain Harte on Highway 108. A working group was established and developed an Access database for 5000 homeowners located inside the project area. A cost share agreement for curb-side pick-up was a major feature of this project and optional free drop off of accepted materials at the central collection site. Organic material was chipped in the tub grinder and

transported to co-generation plants for electricity generation with proceeds returning to the program. This group has once again developed a concept paper to continue and expand this program to the remainder of the county. Several problems were encountered in 2004 with the quality of the slash debris and several changes have been incorporated into the proposal for 2005.

- Sugar Pine Fuel Break – SPI officials and Sierra Resource Management developed the Sugar Pine Fuel Break Project in 2002. This fuel break is located between the North Fork of the Tuolumne River and the communities of Sugar Pine and Long Barn. This fuel break connects to the Mi-Wuk Fuel Break to the west and is part of the fuel break system proposed by the Highway 108 Strategic Planning Group. Timber harvests, thinning and mechanical fuel reduction measures will be used to treat the fuels. Both SPI and Sierra Resource Management are members of the Highway 108 Fire Safe Council and Highway 108 Strategic Plan Group, which also support this project.

- Tuolumne City Project – Tuolumne City is located near the canyon rim of the North Fork of the Tuolumne River. This area has been threatened numerous times by wildland fires that have originated in the river canyon. Protecting the city and surrounding areas from these fires has cost the State Emergency Fund several million dollars. Notable fires include the Graham Incident of August 1996, which cost the state over $1.2 million and the Stanislaus Complex of September 1987, with a cost of $1.6 million. This project will substantially decrease the cost of providing protection for this area when future fires occur.

  This future proposed project will be a cooperative project between CDF, BLM, USFS and local landowners. It consists of a 5 mile fuel break on the ridge north of the Tuolumne River canyon. The fuel break will provide a point of controlling any future wildland fires that originate in the canyon.

  The Tuolumne City Project is one of a series of projects that will focus on protecting the communities and other values that are at risk from wildfire in the area surrounding the North Fork of the Tuolumne River. This project will tie into the Ponderosa Hills Project to the east, which in turn joins with the federal fuel break system.

  Not only are structures at risk, but also the valuable watershed would sustain major damage should a wildfire occur in this area. Damage to this watershed would affect hydroelectric facilities, the timber industry, domestic water supplies, recreation facilities and many environmental resources in and downstream from the project site. Past fires in this watershed not only cost the state and federal governments millions of dollars to suppress, but also inflicted great monetary losses to public and private stakeholder assets.

- Columbia State Historic Park/Cattle Drive Trail Fuel Break and Fire Defense Access Project – This project was submitted for consideration in 2003 through the

National Fire Plan WUI Grant process in cooperation with the Highway 108 Fire Safe Council, but was not funded. The proposed project is a planned fuel break on both private and public parcels north of the Columbia State Historic Park and south of the South Fork of the Stanislaus River. The fuel break would connect Yankee Hill Road with Parrotts Ferry Road terminating at the intersection of Marble Quarry Road and Parrotts Ferry Road. Also included in this proposal is a removal of overgrown fuels inside the right-of-way along several county access roads to the fuel break (Experimental Mine, Cattle Drive Trail, Ponce Road, Marble Quarry Road, and Yankee Hill Road). Before the project is resubmitted for grant consideration, affected landowners are being contacted for an update and approval on changes to the proposed project. In addition to national fire plan dollars, this project is an excellent candidate for Proposition 40 funding when it becomes available.

- Cedar Ridge Project – The Cedar Ridge Project is in the conceptual stage and is in the Highway 108 corridor planning area between Sonora and Twain Harte, located in a heavily populated area between the South Fork of the Stanislaus River and Highway 108. This project will involve the creation of fuel breaks and the use of prescribed fire to treat the fuels adjacent to the fuel breaks. The USFS, CDF, BLM and private landowners will be main cooperators in these projects.

  The Cedar Ridge Project will use the same treatments as the Mi-Wuk Fuel Break on the south canyon rim of the South Fork of the Stanislaus River. The communities of Phoenix Lake, Cedar Ridge, Crystal Falls and Twain Harte will also be protected by these mitigation measures.

  The Cedar Ridge area borders the USFS Sampson Project, in which one component consists of performing manual fuel reduction measures on the northern boundary of the Cedar Ridge subdivision. This treatment area is near the Creek Fire of 1994, which burned over 1400 acres of timber and threatened the subdivision. Crews have completed thinning of the vegetation adjacent to the subdivision in preparation for prescribed burns that are proposed for a later date. This is the first of a series of projects that are being planned in the general area and should be considered for Proposition 40 funding when available.

- Peoria Flat-Rawhide Project – This is a conceptual fuel reduction project on Bureau of Reclamation property that extends from Baseline Conservation Camp to just south of the Rawhide Mobile Home Park. The vegetation in much of this area consists of heavy brush. New Melones Reservoir and Tulloch Lake are north of this project and it is not uncommon to get fire starts from boating enthusiasts recreating at these lakes. This project will give firefighters a safe place to both access and fight fires that occur in this area.

Various projects have been proposed and implemented to mitigate the risk to those "Assets" that have been identified as being at risk in the Battalion. These prescriptive projects are as follows:

- The Ponderosa Hills 2002 WUI Grant Project – This project was developed to seek grant funds to reproduce fire safe public information pamphlets to distribute to each homeowner in the Ponderosa Hills area. The public information pamphlets were produced and contained information to help educate the local citizens on the wildfire problem in the area and how they can prepare their homes and families the next time a wildfire occurs. The pamphlets included: evacuation routes; "what to do in case of fire"; emergency radio stations; three types of evacuations; making your home fire safe; how to prepare your home for an oncoming fire; a map of the area displaying the evacuation centers; evacuation checklists; and other pertinent information for the homeowner that relates to wildfire safety. The pamphlets were distributed to the residents in Ponderosa Hills when fire safe inspections were performed in the spring of 2003.

  The $2,213 BLM WUI grant funds have been used to reproduce the public information pamphlets and evacuation plan maps. The brochures were adapted to the local area by CDF staff from fire safe pamphlets created by the Butte Unit. The evacuation plan maps were created by GIS staff of the Tuolumne County Community Development Department.

  The original grant proposal planned on duplicating 1000 copies of the maps and pamphlets, but due to higher printing setup costs, only 500 were printed. This is well over the amount necessary to provide a copy to every resident in the Ponderosa Hills subdivision. The intent of making 1000 copies was to provide the brochures to residents in communities adjacent to Ponderosa Hills that would use the same evacuation centers during major fires. Now that the brochures have been developed, they can be reproduced inexpensively for other communities in the local CDF Unit. Only maps would need to be updated for the intended communities. This was done through another grant in the Gibbs Ranch area near Sonora.

- Gibbs Ranch 2003 WUI Grant Project – Gibbs Ranch/Rancho Sonora Estates is a subdivision located northwest of the City of Sonora. This community situated on top of a steep hill above Highway 49 that is covered with heavy accumulations of vegetation. The Gibbs Ranch 2003 WUI Grant Project involved a similar process that was performed in the Ponderosa Hills 2002 WUI Grant Project. This project was completed in June of 2004 with the distribution of the Tuolumne County Wildland Fire Evacuation Plan and travel map to every house in the planning area.

- The Greater Twain Harte Fire Safe Program – was a major success in 2004. Approximately 4000 tons of yard waste and slash debris was removed from the project area which encompassed twenty one square miles. Over 500 LE-38 defensible space fire inspections were completed by CDF in the project area.

- Ponderosa Hills Skyline Drive Demonstration Project – was completed within budget and on time in July of 2004 and is the first phase of a proposed extension to neighboring projects being planned and implemented on federal lands to the south and east to protect this community.

- Columbia Chipper Program – The Columbia Fire District received federal grant funding in 2004 for the purchase of a chipper unit and truck for towing to participating parcels for on site fuel reduction and broadcasting of chipped material. As of January 2005, district personnel and volunteers will be available to chip clean woody material on a cost share basis with area landowners. Chips are to be left on site and not transported.

- Tuolumne County Community Wildfire Protection Plan – was completed and approved by the Tuolumne County Board of Supervisors in December, 2004. This comprehensive, yet broad based document brought together the decentralized efforts of the various stakeholders, interest groups, and agencies to mitigate the wildland fire problem in the county from a strategic perspective. Individuals from the various communities seeking to develop specific Wildfire Community Protection Plans should use this document as a framework and reference for more narrowly focused plans that would be tailored for specific communities.

- Tuolumne County Wildland Fire Evacuation Plan – was produced initially for the Ponderosa Hills project and again in 2004 in the Gibbs Ranch subdivision with the intent to be used in other communities in the county. This document was also distributed in 2004 inside the Greater Twain Harte Fire Safe Project as part of the LE-38 defensible space inspection component. The document has been praised by all who have obtained a copy and only limited quantities exist. Grant funding for reprinting of this vital document and community maps will be submitted through the California Fire Alliance Grant Clearinghouse website in February 2005.

- Tuolumne County Wildland Fire Education Plan – was submitted in 2004 but was not funded through the California Fire Alliance Grant Clearinghouse. This project proposes to educate the public on increased defensible space requirements as a result of new laws. Through the use of public presentations to homeowner associations, service clubs, and other interested focus groups, CDF staff will use multimedia tools to present changes to California State law that take effect January 1, 2005.

  Additional education is planned through a revised fire road sign program. New signs will be developed and displayed along key highways in the county highlighting changes in the law regarding defensible space. This proposal will be resubmitted for consideration in February, 2005.

- Ponderosa Hills Pine Needle Pick-up Program – $18,000 in funding has been provided to assist homeowners in the Ponderosa Hills subdivision near Tuolumne City to remove leaf litter and pine needle accumulations. Information and

education is being provided through handout materials and personal contact from the Highway 108 Fire Safe Council on what action homeowners must take to comply with PRC4291 requirements for defensible space.

- Cattle Drive Trail Fuel Break and Fuel Reduction Program – This project is being planned in three phases and extending from Yankee Hill Road to Parrott's Ferry Road. The fuel break is located along Cattle Drive Trail for the first phase and then follows the main ridgeline west to Blue Mountain Minerals. From Blue Mountain Minerals, the project follows Marble Quarry Road back to Parrott's Ferry Road near Gold Springs Subdivision. The first public meeting is scheduled for January 2005. Interest letters have been sent to affected landowners.

- Ponderosa Hills/Skyline Drive Fuel Reduction Extension – This project is being submitted for grant consideration from the Highway 108 Fire Safe Council in February 2005. The project will extend the initial work that was completed in 2004 on Skyline Drive in Ponderosa Hills around the Ponderosa Hills subdivision and connect with USFS fuel reduction projects near Buchanan Mine Road to the Southeast.

- Tuolumne County Fire Safe and Evacuation Plan – This project has been submitted for grant consideration in 2005. Through an aggressive fire road sign program and re-printing of the Tuolumne County Wildland Fire Evacuation Plan with fire safe inspections, this project will reduce the number of homes damaged by wildland fire. Education about fire clearance requirements through public meetings and the fire road sign program will increase awareness ad compliance with new provisions of PRC 4291.

- Fire Prevention Signs – Post fire prevention signs, to better educate the public on fire hazards and methods of prevention. Messages will target causes from equipment use.

- LE-38 Inspections – Utilize self inspection mailers throughout the greater Twain Harte area to bring 5000 properties into compliance with PRC 4291.

- Burn Permit Administration – Provide fire prevention education materials and positive agency contact with each permit, explaining fire safety tips. Also provide general guideline pamphlet for evacuations and home owner preparation.

- Enforcement of laws relating to wildland fire, including prosecution of arson type fires.

- Cite all debris burning violations and referral to Tuolumne County Air Pollution Control for enforcement action.

- Initiate burn ban effective fire season 2005 for all open burning. This will eliminate fires caused from debris burning.

- Enforcement inside the Greater Twain Harte Fire Safe Program of PRC-4291 inspections and citations if needed during a focused inspection period to be completed before June 2005.

- Aggressive fire cause and determination of all unwanted fire.

- Focused LE-38 program in the Columbia and greater Sonora area with evacuation flyer distribution and explanation.

- Focused LE-38 program in the Greater Twain Harte, Phoenix Lake, and Cedar Ridge areas with evacuation flyer distribution and explanation.

- Burn Permit administration and distribution in 2004 of evacuation flyer and distribution at the time of permit issuance.

- Continue fire prevention roadside sign program and update if grant funding becomes available.

Tuolumne County Fire Marshal WUI Mitigations

In Tuolumne County, the inspection authority is the Tuolumne County Fire Prevention Bureau (FPB). This department is under the direction of the Tuolumne County Community Development Department.

In order to mitigate the wildland fire problem in Tuolumne County, the California Department of Forestry and Fire Protection's Tuolumne-Calaveras Unit Chief and The Tuolumne County Board Of Supervisors directed the Tuolumne County Fire Marshal to make the following amendments to the County's adopted Ordinance Codes for the California Building Code (CBC) and California Fire Code (CFC) and the Fire Safe Regulations with Public Resources Code 4290 and 4291.

A. Defensible Space

"Defensible Space" is the area within the perimeter of a parcel where basic wildland fire prevention practices and measures are to be implemented and maintained, including but not limited to removing brush, flammable vegetation, or combustible growth that is located from 30 feet to 100 feet from a building or structure measured from the eaves, porches, decks and balconies to the property line, to provide the key point of defense from an approaching wildfire or an escaping structure fire.

Many of the parcels in the County that lend themselves to easier development have now been developed or "built out" leaving many challenging odd shaped or steep parcels for homes to be built on. A combination of exceptions listed below focus on Fuel Reduction for the wildland and Fire Safe Construction standards

built into a home to protect it from wildfire. Together, these measures protect the wildland and make the home safer to defend or even able to defend itself should a fire occur.

1. A request for an exception to Defensible Space and Fuel Modification shall be made in writing to the inspection authority by the applicant or the applicant's authorized representative. The request shall state the specific section(s) for which an exception is requested, material facts supporting the contention of the applicant, the details of the exception or alternative measures proposed, and shall include a map showing the proposed location of the exception or alternative measures and a written summary of the exception or alternatives. Exceptions or alternative measures shall be limited to the following:

2. Defensible Space may be reduced when the applicant or his/her authorized representative submits a comprehensive fuel reduction plan to the inspection authority (FPB). Once the fuel reduction plan is approved by the inspection authority (FPB), the plan shall be implemented and completed prior to approval of the Final Parcel or Subdivision Map, or prior to conducting a final inspection under a building permit, or issuing a building permit. Implementation and completion shall be documented and approved by the inspection authority (FPB).

3. The following alternative measures or others may be granted by the inspection authority (FPB) when Defensible Space requirements are physically impossible to meet and the alternative measures substantially reduce the fire hazard to a level equivalent to that of the Defensible Space, are agreed upon by the applicant prior to the issuance of a Building Permit and are completed prior to the final inspection or the issuance of a certificate of occupancy for the Building Permit:

    a. A residential fire sprinkler system meeting the requirements of NFPA 13 D, with the addition of pilot fire sprinkler heads in the attic, and a minimum of one hour-fire resistive construction on the structure's exterior, including accessory attachments with habitable spaces and projections, such as eaves, decks and porches shall be a minimum of one-hour fire resistive construction, heavy timber construction or constructed of approved non-combustible materials and shall have the under floor enclosed within six inches of the ground. Final inspection and approval is required by the inspection authority (FPB).
    b. Fuel breaks or maintained green belts with other alternative built-in fire protection measures which may be granted by the inspection authority (FPB) based upon certain modifications of the California Building Code standards for one-hour fire resistive construction installed on the exterior of a structure including the eaves, decks

and porches.

4. Defensible Space shall not be reduced to less than six (6) feet from the overhang of the eaves on the affected side requiring the Defensible Space.

B. Fire flow

To assure the needed amount of water is on site to keep a fire from spreading from a commercial structure under construction to the wildland or forest, fire flow must be on the parcel and available through a fire hydrant at the time of issuance of a building permit as outlined in Section 15.20.010(A) of the Tuolumne County Ordinance Code. (CFC Amended).

C. Fireworks

To continue to keep the number of fire starts down from fireworks, Section 15.20.080 of the Tuolumne County Ordinance Code is adopted to prohibit the use of certain fireworks throughout the County including all Fire Districts and further regulate public fireworks displays to reduce the fire hazard and augment the provisions of the California Fire Code, Article 78 and Article 11, Section 1101, Division II, Appendix II-A, Section 10.

Fireworks Public Education

Each year, CalTrans readable message signs are activated in Oakdale, Calaveras County, and Tuolumne County. Cable TV presentations are made during Tuolumne County Board of Supervisors meetings by Tuolumne County Fire Prevention Bureau staff and meetings are also with our high risk communities and stakeholders. CDF Fire Prevention staff also distributes and displays paper signs throughout Tuolumne County. Meeting internally with law enforcement staff, citations are reviewed on an annually basis. All law enforcement agencies in Tuolumne County work cooperatively during the 4th of July holiday period to eliminate illegal fireworks use.

D. Wood Shakes

The County's hot dry summers and continuing building boom with the smaller than ever volunteer fire department makes getting enough equipment and firefighters to a single fire a challenge for the Assistant Fire Warden. Section 15.20.025 of the Tuolumne County Ordinance Code is adopted to prohibit wood shakes, wood shingles and other wood roof covering materials in all roof covering classes and walls for all structures, except for minimal repair of existing roofs or walls to prevent the spread of fire caused by flying embers and further stress on the fire department during a fire.

F. Roads

The Tuolumne County major road system is narrow, steep, and winding system wide and could be characterized in many locations as constantly congested with heavy traffic. Thick vegetation growing along many of the right-of-ways also negatively impacts roadways. Collectively, these factors combine to act as a barrier for timely responses of firefighters.

The construction of 20 foot wide travel ways, with safe access length limits on roads and proper identification of such roads, is needed to allow a speedy response time for firefighters throughout the year as outlined in Section 15.20.045 of the County Ordinance Code amending the California Fire Code Section 901.4.5 and Section 15.20.050 of the County Ordinance Code supplementing California Fire Code Section 902 and PRC 4290.

G. Private Driveways

Section 902, Fire Department Access, of Article 9 is supplemented by the provisions of sections 15.20.050 T.C.O.C. and PRC 4290. Creating a Residential Driveway width that is 12 feet or two parcels may share a common driveway if it's 18 feet and the required slope, turnouts and turn around are installed to safely allow firefighters to move from one home to the next to protect them during a wildland fire.

H. Street Addressing

Section 901.4.4, Premises identification, of Article 9 is supplemented by the provisions of sections 15.20.040 and 4290. Creating identification of buildings, reflective, if the home is more then 50 feet it must be posted at the road and it must be maintained. This is to assist firefighters on the County's narrow, steep, winding roads, rolling hills with thick vegetation that acts as barriers for viewing address and identification on buildings and homes as firefighters try to achieve timely responses during wildland fires or incidents that threaten the wildland.

POLICY CHANGES

A. Propane Tanks

As the building boom continues each home is built with a single LPG tank for fire fighters to protect during a wildland fire or structure fire. Under the guidelines outlined in the CFC and NFPA the Fire Marshal is now giving homeowners the option to have the tank installed underground which has been proven safer during a wildland fire.

B. Recommended Changes to Land Use and Development in the Future

1. Focus more on the maintenance of the fuel treatments or roads.
2. Approve a variety of fire resistive siding material to be used on the exterior of all new homes under construction.
3. Develop a residential fire sprinkler ordinance, which includes some exterior protection for homes on steep slopes.
4. Require subdivision over 12 parcels to have a community propane system.

Each CWPP project shall comply with all Federal, State, and County Laws, Regulations and Locally Adopted Ordinances.

Highway 108 Strategic Fire Planning Group Efforts

In concert with the Highway 108 Fire Safe Council efforts, in March 2004, the Highway 108 Strategic Fire Planning Group formed. Made up of County, State, and Federal Fire Protection Agencies and large private landowners (cooperators), the purpose of this group was to cooperatively plan and implement a strategic fire defense system designed to reduce the threat of loss of life, property, and natural resources within the Highway 108 corridor wildland urban interface zone.

The Highway 108 Strategic Fire Planning Group consists of the following agencies and cooperators:

- USDA Forest Service, Stanislaus National Forest
- Tuolumne County Fire Department
- California Dept. of Forestry and Fire Protection – Tuolumne-Calaveras Unit
- Bureau of Land Management
- United States Bureau of Reclamation
- Sierra Pacific Industries
- Highway 108 Fire Safe Council
- Tuolumne Band of the Me-Wuk Indian Tribe

Several agency representatives to the Highway 108 Strategic Fire Planning Group are also members of the Highway 108 Fire Safe Council. The Fire Safe Council has been active for the past three years and these efforts will continue. With the publication and subsequent implementation of the Highway 108 Strategic Plan, three critical roles have been identified for the Highway 108 Fire Safe Council:

1. Continue to educate and assist individual property owners in making their privately owned property more fire resistant/fire safe.

2. Serve as a formal, non-profit entity that can apply for various funding types and grants for projects that Agencies can not apply for.

3. Assist in working with private landowners where strategic fire treatments on private lands are key to the success of the overall strategic defense system. The Fire Safe Council can assist in securing resources for both planning and treatment implementation within identified areas.

Members of the Highway 108 Strategic Fire Planning Group have developed and signed a Memorandum of Understanding outlining the purpose, benefits and interests, and responsibilities of the participating agencies and cooperators in developing and implementing the Highway 108 Strategic Fire Plan. A Communication Plan was also developed by the Highway 108 Strategic Fire Planning Group. The purpose of the Communication Plan is to ensure that communication goals and objectives are met, and that the involved fire protection agencies and cooperators speak with a single voice as they cooperatively plan and implement strategic fire defense system projects within the planning area.

Within this Strategic Fire Plan, the total fire environment was analyzed. Based on the analysis, treatments needed to create a strategic fire defense system across jurisdictional boundaries and a variety of land ownership were identified. Priorities for treatments have also been addressed.

The local Fire Safe Council, homeowner associations, local business owners and private landowners must continue to be involved and do their part within the each local community and/or subdivision. By working together, a more fire safe environment will result in minimizing losses of life, property and natural resources when a wildfire does take place.

The table below lists the projects that are planned within the Highway 108 Strategic Fire Planning Area in 2005/2006.

Table 10: Highway 108 Strategic Fire Planning Group 2005/2006 Projects

VEGETATION TREATMENT/FUEL REDUCTION PROJECTS	AGENCY JURISDICTION	PLANNED IMPLEMENTATION YEAR
French Camp Fuel Break	FS	2005/2006
Cattle Drive Trail Fuel Break	CDF	2005 – Phase I
Old Oak Ranch/Clovis USD Fuel Break	CDF	2005/2006
Yankee Hill/Big Hill Fuel Break	CDF	2005/2006
Five Mile Fuel Break	FS	2005/2006
Cedar Ridge Fuel Break	CDF	2005/2006
Mi-Wuk/HWY 108 Fuel Break	CDF/FS	2005
Greater Tuolumne City Fuel Break	FS/CDF/BLM/PVT	2005/2006
PRC 4291 Defensible Space Compliance	PVT	2005 & Ongoing
RLC Fuels Reduction	PVT	2005

VEGETATION TREATMENT/FUEL REDUCTION PROJECTS	AGENCY JURISDICTION	PLANNED IMPLEMENTATION YEAR
Skyline Drive/Turnback Creek Fuels Reduction Project	PVT	2005
Greater Tuolumne City	FS/CDF/BLM/PVT	2005/2006
Sampson Fuels Reduction	FS	2005
Beardsley Line DFPZ	FS	2005
Pinecrest Fuel Reduction	FS	2005
Highway 108 Community Protection	FS	2005
D53 Roadside Hazard Fuels Reduction	FS	2005
D53 Thin	FS	2005
South 108 Fuel Reduction	FS	2005
SPI Planned Projects	FS	2005

Battalion 16 Plan

Battalion 16 Overview

Battalion 16 extends from the foothills in Eastern Stanislaus County on the west, to the Battalion 15 boundary to the north, the Tuolumne County line on the south and several miles east of Groveland. The elevation ranges form 250 feet on the west to 3,500 feet on the east side of the Battalion. The main communities in the Battalion are Lake Don Pedro, Chinese Camp, Moccasin and Groveland. Ranching, tourism, recreation and small businesses are the main source of revenue in this area. Highway 120 serves as one of the four major access points into Yosemite National Park. This leads to increased traffic on this highway, especially during the summer months. The Groveland Community Services District provides structural fire protection to the greater Groveland area. All other local government fire protection in the Battalion is provided by the Tuolumne County Fire Department. The Groveland (2 engines), Green Springs (1 engine) and Blanchard (1 engine) CDF FFS are within this Battalion. The Groveland station serves as the Battalion headquarters.

Battalion 16 Fuels, Assets at risk, Ignition and Fire History Summary

The areas around the Lake Don Pedro, the community of Moccasin, and the Tuolumne River Canyon below the community of Groveland present the greatest threats in the Groveland Battalion.

Assets in Battalion 16 include:

- Concentrations of residential and commercial structures in the communities of Groveland and Lake Don Pedro.
- The Priest Watershed provides water and power to the City of San Francisco. Soil erosion and ash from wildfires damage and degrade the water storage and power generating facilities.
- Don Pedro Reservoir provides irrigation water and power to the Turlock and the Modesto Irrigation Districts.
- The Tip Top Mountain Peak northwest of Groveland has communications vaults and various types of antennas. The antennas are used for radio, microwave, and cellular phone services.

The Groveland and Moccasin area has experienced numerous major fires including the Creek, Moccasin, Priest, Ackerson, and Roggie Fires. The Fourth of July week at Lake Don Pedro Reservoir usually has an increase in fireworks caused fires. The majority of the Lake Don Pedro area fires are caused by vehicle and equipment use. Through public education in 2004 there were no equipment use caused fires in the Lake Don Pedro area. The Groveland and Moccasin areas have a history of arson fires, but due to law enforcement efforts by BLM, USFS, and CDF there were no arson fires in 2004.

The Groveland and Moccasin area has a history of large damaging fires. Fire history data indicates that a large fire occurs every other year in this area whether it is on federal or private land. Frequent large fires in this area have caused increasingly serious losses of property and high-value resources.

Battalion 16 Prescriptions

- The Lake Don Pedro area has large concentrations of brush. These brush areas pose a threat to the Lake Don Pedro community. The following measures will take place to mitigate this hazard:
  - A focused hazard reduction program (LE-38 inspections) will be done in the areas adjacent to the brush concentrations annually.
  - The Yosemite Foothills Fire Safe Council will work with local landowners to reduce fuels on their property. The Don Pedro Homeowners Association provides a centralized location for property owners to dispose of vegetation. This project is ongoing.

- The Moccasin area has large concentrations of brush. The area south of Moccasin is in its third year of growth since the Creek Fire. The area around Priest Grade where the Moccasin Fire occurred in 1992 is in its 13th year of growth. The Moccasin area is in the Southwest interface Team Project area. The following projects will help mitigate this hazard:
  - Tip Top Fuel Break – This fuel break is a cooperative effort between CDF and BLM to construct a fuel break that extends along ridges from Highway 120 west of Big Oak Flat northward to the shores of Lake Don

Pedro. This is where the Moccasin Fire of 1992 burned, threatening the Big Oak Flat and Groveland communities. Since the fire, the heavy brush that existed prior to the fire has grown back presenting the same scenario as before. Planning for this project began in the fall of 2001. Status: BLM mastication work has been completed. A small section of line is left to be completed by hand and should be completed in winter 2005

- Jackass Fuel Break – The Jackass Fuel Break begins on the ridgeline just south of Big Oak Flat and continues in a mainly southern direction to the Tuolumne/Mariposa county line. This project lies within the Southwest Interface Team Project area. This fuel break consists of privately owned land and BLM land. This fuel break played a role in helping to contain the Creek Fire. This fuel break also acts as a buffer for the communities of Big Oak Flat and Groveland. Status: Some of the fuel break is in maintenance mode, while some is still being completed.
- Hetch Hetchy/Anker # 2 VMP – This project is a prescribed burn on HHWP, BLM, and private land in the Moccasin area. The northern end of this project is the Hetch Hetchy/Anker #1 VMP, and the southern end is the Creek Fire. Reducing these fuels will give fire fighters a chance to contain the fire before it gets into the Priest Reservoir basin. Priest Reservoir provides drinking water to millions of people in the Bay Area. Status: Project is being reviewed in Region Office; plan to begin prep work in winter/spring 2005.
- Old Priest Grade Fuel Break – This fuel break begins at Priest Station and runs along the ridgeline down to the community of Moccasin. This area is where the Moccasin Fire occurred in 1992. This fuel break will give firefighters a chance to stop the spread of a fire into the Priest Reservoir Basin and into the community of Big Oak Flat. This project consists of private property, BLM and HHWP. Status: Planning stages.

- The Tuolumne River Canyon has steep, brush covered slopes that have resulted in many serious threats to the communities directly south of the canyon.

  - Rim Truck Trail Fuel Break – This fuel break runs from the west side of Indian Creek westerly to the north of Pine Mountain Lake, to Wards Ferry. This fuel break was used during the Stanislaus Complex in 1987 to keep fire out of the Pine Mountain Lake Subdivision and the community of Groveland. Currently the larger property owners are working together to reopen sections of the fuel break with their own equipment and manpower. Since the spring of 2004, the property owners have completed one mile of fuel break. Status: Fall of 2005 begin CEQA process for remaining line that needs to be constructed.
  - Pine Mountain Lake Project – The Pine Mountain Lake Project is an ongoing cooperative fuel reduction project between CDF and the Pine Mountain Lake Association, in the community of Groveland, within the Pine Mountain Lake subdivision. A private consultant developed a pre-fire management plan for the Association, which included removal of dense vegetation on 382 acres,

and a focused fire safe inspection on the homes and vacant lots within the subdivision. Work began in 1997. The Pine Mountain Lake Project, through its fuel reduction measures, will help firefighters get a quick upper hand on fires that occur in the area, thus reducing the economic impacts on the community. Status: CEQA will need to be renewed 2006, project will be ongoing.

- Senior Assistance Project – The Yosemite Foothills Fire Safe Council was awarded a grant to make the Yosemite Vista Estates subdivision a fire safe community. In May of 2004 the Big Creek fire threatened this community. Large areas of standing brush have been masticated around the perimeter of the community. Other areas have been cleared by heavy equipment. The interior of the community will be cleared by contract labor. Status: Project will be completed in the fall of 2005.
- Southwest Interface Team (SWIFT) Project – This project is a cooperative project between the USFS, CDF, (TCU &MMU), BLM, Mariposa County Fire Department, Tuolumne County Fire Department and the Natural Resources Conservation Service (NRCS). This project will be ongoing and will focus on the area of southeastern TCU, northeastern MMU, and southwestern Stanislaus National Forest (STF). This area has seen the most significant wildland fire history of all areas of both Units and the Stanislaus National Forest. The team will perform an assessment of the area similar to that of the CDF Fire Plan process. Projects will then be developed to mitigate the hazard. The team concept will ensure that all projects are coordinated between all agencies so that the maximum benefit will be achieved. Another project evolving from the SWIFT effort will be a wildland fire pre-attack plan for the project area. This plan will include the collection of specific GIS spatial data that will identify water sources, helispots, staging areas, structures, fuel breaks, and many other pertinent details that will assist in the fire control effort.

- Creek Fire Fuel Maintenance Demonstration Project – This is a cooperative project with BLM to utilize prescribed burning on the Creek Fire area of 2001 as a hazard reduction/maintenance treatment. A component of this project will involve identification of three specific burn areas within the fire area to treat with prescribed fire based to determine an appropriate fire rotation period that would result in less volatile fuel beds. This project will also result in community and watershed protection. The treatment will occur on 2,400 acres, where 800 acres will be burned each year. BLM did not secure funding for this project in 2005, so the earliest the project could start is 2006.

- Tuolumne County Fire Safe and Evacuation Plan – This project has been submitted for grant consideration in 2005. Through an aggressive fire road sign program and re-printing of the Tuolumne County Wildland Fire Evacuation Plan with fire safe inspections, this project will reduce the number of homes damaged by wildland fire. Education about fire clearance requirements through public

meetings and the fire road sign program will increase awareness ad compliance with new provisions of PRC 4291.

- High visibility and patrol at Lake Don Pedro Reservoir during the Fourth of July week.

- Explain fire safety tips, provide fire prevention education materials during burn permit issuance.

- Monthly fire prevention message in South County newspaper by Fire Safe Council.
- Fire Prevention signs
- Engine in 49'er parade in Groveland.
- Participate in fire prevention education programs at local schools.
- Fuel Breaks – See Mitigation Prescriptions for High Hazard Fuels
- VMP – See Mitigation Prescriptions for High Hazard Fuels
- LE-38 inspections
- Fire Prevention Signs
- Burn Permits

Battalion 16 Cooperators Projects

- Highway 120 West Fuel Break (USFS STF Groveland District) – The objective of this project is to reduce fuel loading and ladder fuels on both sides of Highway 120 for a distance of approximately 200' feet from the highway centerline. Work will be performed on 332 acres along Highway 120 from Old Highway 120 (Second Garrotte) east to Colfax Springs. The NEPA analysis has been completed and it is anticipated that the project will be completed in 2006.

- Creek Fire Research Project – This is a cooperative project between the Tuolumne County Farm Advisor -University of California-Agriculture & Natural Resources-Cooperative Extension, Bureau of Land Management and CDF. This project will analyze the affects that repeated fires over an area have on the vegetation, soils and other site features. It was funded by RAC Grant funds and will continue through 2006. Sample plots have been set up on the Railroad Grade southeast of Priest Reservoir.

- Fuel Reduction Under High Voltage Transmission Lines Project (Hetch Hetchy Water and Power) – This project is utilizing Hetch Hetchy Water & Power staff and contractors, and fire crews from Baseline Conservation Camp to reduce hazardous fuel loading under numerous transmission lines. The use of hand crews and mechanical mastication will reduce the fuel loads, which will lesson wildfire damage to the lines, and provide breaks in heavy fuel beds that lie adjacent to many communities. The work will occur on various locations throughout Southern Tuolumne County. An estimated 90 acres will be treated each year in 2005 and 2006.

- Priest Reservoir Hazard Reduction Project (Hetch Hetchy Water and Power) – The objective of this project is to maintain a fuel profile around Priest Reservoir that reduces the potential for wildfire damage to the high value domestic water supply. Mechanical, hand, and animal treatments will be utilized to reduce the fuel loading in specific areas around the reservoir. Approximately 150 acres will be treated per year in 2005 and 2006

FIRE SAFE COUNCIL ACTIVITIES

Calaveras Foothills Fire Safe Council

2001 Fire Safe Council Formation Grant Project

In March 2001, TCU staff applied to the Stanislaus National Forest for the USFS Dependent Rural Communities Grant to seek funding for the Fire Safe Council Formation Project. This project was proposed to expand the original Tuolumne-Calaveras Fire Safe Council into four new Fire Safe Councils centered on each of the Four east-west State Highway Corridors (Highways 26, 4, 108 and 120) in the Unit. The Fire Safe Councils are a coalition of government, public and private sector individuals and organizations that share a common, vested interest in wildland fire prevention and loss mitigation for the area. The four councils have provided a needed link for input and cooperation between the public and private sectors to the fire agencies in the development of projects for the National and California Fire Plans. In September 2001, the Stanislaus National Forest awarded TCU with $101,300 to contract with a consultant who would coordinate the formation of the new fire safe councils.

In September 2002, TCU awarded the coordinator contract to Mark Valle of Corporate Visions from Carlsbad, California. Mark met with Unit staff in October to formulate a list of potential council members and develop a plan for starting the councils. The councils are now non-profit corporations certified by both the State of California and the Internal Revenue Service (IRS). The councils have been developing and presenting their strategies to spread the fire safe message and reduce the wildfire hazards that exist in their communities. They are working with the fire protection agencies within each council's geographic area.

2001 Fire Safe Council Operating Costs Grant

After the Stanislaus National Forest awarded TCU the grant to contract with a coordinator to expand the current Tuolumne-Calaveras Fire Safe Council to four new Fire Safe Councils,

TCU pre-fire management staff applied for the 2001 Community-Based Wildfire Prevention Grant through the Sacramento Regional Foundation. TCU was awarded $20,000 to provide operational funds for information and education materials, and general expenses to each of the four new Fire Safe Councils to assist in their establishment and planning for the next 18 months. The four councils used this money to file for corporate and non-profit status, provide travel expenses for Mark Valle to attend the statewide Fire Safe Council meetings, and purchase supplies, brochures and marketing materials. This grant ended on June 30, 2003.

Fire Safe Council Operations 2003 Through 2004

Upon completion of the Grant contract, the Calaveras Foothills and Sierra Highway 4 Fire Safe Councils continued under volunteer members and contributions. The Secretary for the Calaveras Foothills Fire Safe Council contributed to shared information between the two Councils with the absence of a Council Coordinator. In December of 2003, a decision was made to merge the 2 Fire Safe Councils into one due to declining volunteer membership and difficulty in obtaining funding for two separate Councils. The joint Boards voted to merge under the Calaveras Foothills Fire Safe Council articles of incorporation and place the Sierra Highway 4 Fire Safe Council on an inactive status. There is now only one FSC serving all of Calaveras County and western Alpine County.

The Calaveras County Board of Supervisors on January 5, 2004 approved a minute order authorizing the allocation of Federal Forest Reserve Title III funds of $40,000 for the hiring of a part-time Coordinator for the Fire Safe Council. Also included in the minute order was $379.87 for fire prevention brochures for the Fire Safe Councils. A part-time coordinator was hired effective June 15, 2004 with a 24-month contract. Office space was being provided in Angels Camp by the County Board of Education.

The Fire Safe Council completed the preparation of five Concept papers for submission to the State Fire Safe Council Clearinghouse in February, 2004. One paper was selected for funding by the Bureau of Land Management entitled Defensible Space for Seniors and the Disabled. The grant award for $54,000 is pending and should be funded in 2005.

During the latter part of 2003, the Fire Safe Council was awarded $15,000 from the Calaveras County Air Pollution Control District to operate a chipper program that would reduce airborne emissions from outdoor burning. The Council hired a Chipper Contractor starting in May, 2004. The final chipping was completed on September 30, 2004. Onsite inspections and chipping of 70 properties totaling 5,463 cubic yards of material were conduced over 132 hours of contractor time. Total contract cost for our chipper contractor was $13,200. Work included 53 lots in Bear Valley and Sky High Ranch Subdivisions.

Community outreach activities of the Calaveras Foothills Fire Safe Council included attending the Home and Garden Show; displaying the Fire Safe Brochures at the CDF booth during the County Fair; operating the informational booth at the Mokelumne Hill 4th of July event; attending the West Point and White Pines Lumberjack Days; and presentations to homeowners associations.

The Fire Safe Council also initiated work on the preparation of a Calaveras County Community Wildfire Protection Plan in coordination with the State Department of Forestry (CDF), U.S. Forest Service (USFS), all fire prevention agencies and stakeholders in the County. Work is now spearheaded by the San Andreas office of CDF with stakeholder meetings to occur in 2005.

Fire Safe Council Operations 2005

A total of seven concept papers were submitted to the State FSC Grant Clearinghouse for funding consideration. They included resubmitting the four unfunded projects that were submitted in 2004 and separating the Roadway Clearance Project into two parts. The new projects were Seniors and Disabled Defensible Space and Chipping. The Seniors and Disabled Defensible Space was selected by the US Forest Service for funding of $66,000 and an application has been submitted. The two phases of the Roadway Clearance grant were selected by the CDF for funding under Proposition 40 for a total of $109,400 and applications are being prepared.

An additional $14,000 was received from the Calaveras County APCD to continue the Chipping Program in 2005 and field work is underway. A grant application was submitted to the Calaveras Community Foundation for a “Living with Fire” insert in the two weekly local newspapers published by the Enterprise. A request for $20,000 from the Federal Forest Reserve Title III funds from Calaveras County was rejected by the Board of Supervisors because funds remained to continue the part-time FSC Coordinator for another year. The Supervisors indicated that they would consider another request from the FSC in next years’ funding cycle. A fire assessment of Love Creek and Forest Meadows was requested and conducted by Fire Wise with the goal of obtaining national recognition for these two communities.

Preparation of a Calaveras County Community Wildfire Protection Plan is underway. Stakeholder meetings have been held and drafts reviewed by the CFFSC. The Plan is scheduled for completion in July 2005. Community outreach activities continued in 2005 including attending local events and distributing educational material.

Western Alpine County

While not part of the Tuolumne-Calaveras Unit's administrative boundaries, Western Alpine County is within the Arnold Battalion's sphere of influence. The TCU 2005 Pre-Fire Management Plan will be considered the CWPP covering this area until Alpine County incorporates this area into their CWPP. The wildland fuel hazard and assets at risk maps for this area can be found in the Amador El Dorado Unit Pre-Fire Management Plan.

The community of Bear Valley has recently become very active in attempting to address fuel accumulations. The homeowners association has retained the services of a Registered Professional Forester (RPF) to assess the wildland fuel hazard in the community. Based on the assessment, treatments were initiated on common areas within the Bear Valley Subdivision with the intent of reducing fuel loading. In addition, the public works department has been successful in obtaining an Alpine County Resource Advisory Committee (RAC) grant to treat fuel along roadways to improve vehicle access and evacuation routes. It is expected that the community will become more active in the future in attempting to obtain additional grants for fire safe projects.

Western Alpine County 2004 Activities

In 2004, the Bear Valley community took an important first step towards promoting and improving community fire awareness through the preparation and adoption of the *Bear Valley Community Plan to Reduce Wildfire Risk and Improve Forest Health.* This comprehensive report was prepared by RPF Don Stikkers at the request of the Bear Valley Residents Inc. (BVRI). The report was funded by the Alpine County Fire Safe Council in the sum of $1,600.00 and provides the framework for future fire planning and resource management activities in the Bear Valley community. An assessment of this nature to determine local forest health conditions had not been conducted in more than 10 years.

In 2004, 40 property owners agreed to the recommendations provided in the *Bear Valley Community Plan to Reduce Wildfire Risk and Improve Forest Health* for defensible space and fuels reduction. These property owners participated in property reviews prepared by Don Stikkers. Many of those property owners filed fire safe exemptions with CDF to have over dense trees thinned on their lots in the summer and fall of 2004. Some work was completed by the fall of 2004 and more work is expected to be done in 2005.

In 2004, approximately 30 Bear Valley property owners participated in the Calaveras Foothills Fire Safe Council Chipper Program during July of 2004.

In 2004, BVRI initiated and funded a common area fuels reduction project on approximately 17 acres of land near Bear Lake. This project will be completed during the summer of 2005. Upon completion of this current project, additional future community fuels reduction projects will be identified and proposed by BVRI.

The Bear Valley Fire Department and Alpine County Road Department conducted a fuels reduction project on 2-6 foot tall Tamaracks on County right-of-way and common areas during the fall of 2004. This project will be continued during the summer of 2005. Presently they have thinned out approximately 1000 small trees.

Western Alpine County 2005 Projected Activities

Through a $25,000 grant received from the Alpine County Resource Advisory Committee (PL 106-393), the Bear Valley community will implement a County road

right-of-way and residential fuels reduction project. Using CDF inmate crews and a contract chipper, property owners in Bear Valley will be able to reduce wildfire risk in residential areas located in Bear Valley, as well as providing improved forest health and safe evacuation routes along County roads. Additionally, Bear Valley representatives will work cooperatively with the Calaveras Foothills Fire Safe Council to provide education and technical assistance to property owners in improving defensible space.

In May of 2005, Bear Valley also applied for a $25,000 grant under the Stanislaus National Forest Economic Recovery Program for fuels reduction on County owned land. This was not funded during this grant cycle.

The Stanislaus National Forest, Calaveras Ranger District has agreed to allow the County to implement a burn pile for residential waste and yard debris, pending approval of a Memorandum of Understanding between the two agencies. This is a cooperative effort of the Calaveras Ranger District and the Bear Valley Volunteer Fire Department.

In 2005/2006, the County will apply for Prop 40 funds to complete fuels reduction on county road right-of-ways.

BVRI will continue work to implement the recommendations provided in the *Bear Valley Community Plan to Reduce Wildfire Risk and Improve Forest Health* for development of a timber harvest plan for merchantable material in Bear Valley common areas.

Highway 108 Fire Safe Council

2004 Activities:

- Applied for six grants totaling more than $400,000 to clear defensible space around residences and vacation cabins in Tuolumne County.
- Received and successfully completed five grant projects totaling $252,000.
- Prepared a fire presentation that was presented to numerous service clubs.
- Assisted CDF and the Forest Service in staffing a fire safety booth at the Mother Lode Fairgrounds.
- Cleared a one-mile fuel break in Ponderosa Hills.
- Provided curbside collection of pine needles, brush and forest slash for more than 5,000 private property owners along the Highway 108 corridor.
- Chipped and sold more than 4,000 tons of forest debris to generate electricity,
- Created a website to assist property owners in clearing defensible space around their residences and vacation cabins.
- Held a public meeting the first Thursday of every month to help coordinate fire prevention activities throughout Tuolumne County.

2005 Activities:

- Write more grant applications.
- Continue the defensible space activities initiated in 2002, 2003 and 2004.
- Prepare Community Wildfire Protection Plans (CWPP's) to connect fire prevention activities across private/public boundaries.
- Search for new ways to economically utilize woody biomass products.
- Extend self-help education to more private property owners.
- Improve collaboration between public agencies (BLM, BIA, CDF, the Forest Service and AQMD).
- Help create and promote healthy forest initiatives.

Yosemite Foothills Fire Safe Council

2004 Activities:

- The Yosemite Foothills Fire Safe Council (YF FSC) established an office in Tuolumne County Fire Department Station 63, about five miles east of Groveland, near the intersection of Highway 120, Smith Station Road and Hells Hollow Road.

- The YF FSC received mapping software from ESRI.

- The YF FSC participated in Tuolumne County's Disaster Mitigation and Community Wildfire Protection Plan development meetings.

- The Tuolumne County Resource Advisory Committee approved YF FSC's $24,000 funding request to help seniors and the disabled create defensible space around their homes. The initial focus of this project will be in Yosemite Vista Estates (YVE), a retirement community on Ferretti Road east of Groveland. This proposal prompted the YVE Board of Directors to hire a contractor to shred an additional 14 acres of brush adjacent to the subdivision, providing additional clearance and protection for the community. The Creek Fire in May 2004 directly threatened this community, and served as a wake-up call to the residents about their vulnerability to wildfire.

- The YF FSC met with SouthWest InterFace Team members from the U.S. Forest Service and the California Department of Forestry and Fire Protection to identify a strategic project area for fire safe council efforts. This resulted in several planning sessions of YF FSC and a core group from the target community of Hells Hollow.

2005 Activities:

- A Hells Hollow neighborhood meeting drew many residents and property owners. Issues addressed at this meeting included hazardous fuels reduction in and around the community, and emergency access and evacuation problems such as narrow, overgrown roads and poor road and address signage. Follow-up meetings initiated by community members resulted in nearly 100% community interest and pledged participation with community fire safe projects. Another outcome of the meeting was the identification of community resources that could assist with the community's fire safe efforts. The skills identified ranged from grant writing and administration to professional expertise in logging, shredding, chipping, and bulldozing equipment. A number of residents have already cleared a significant amount of acreage either through personal efforts, private contract work, or various programs such as the Environmental Quality Incentives Program (EQIP). Community interest and participation encouraged the Stanislaus National Forest-Groveland Ranger District to approve a project providing 200' of thinning and fuels reduction on either side of roads crossing National Forest land in Hells Hollow.

- The YF FSC Coordinator attended the annual Yosemite Vista Estates Board Meeting and Homeowners Association meeting to explain the proposed project. Community members welcomed these efforts on their behalf and are eager for work to begin.

- The YF FSC participated in the Tuolumne County Resource Advisory Committee field trip to funded project sites in southern Tuolumne County.

- Two YF FSC grant proposals approved by the California Fire Safe Council Clearinghouse will provide $40,000 for fuels reduction work and road improvements in the Hells Hollow area, and $35,000 for chipping in the Groveland area. The Tuolumne County Solid Waste Division will provide space for a yard waste collection site at the former Groveland Landfill, where the public can drop off vegetative waste to be chipped and used as mulch and weed and erosion control. Besides reducing hazardous fuels, this will also reduce the amount of material disposed of by burning, and associated smoke and air pollution.

INSTITUTIONAL AND OTHER ISSUES

Although Pre-Fire Management projects provided great benefit to the citizens living in the Unit, they did impose an additional work load on TCU staff. Grant, contract and project administration took up an enormous amount of staff time. Almost all of the fuel reduction projects require a VMP agreement between CDF and the project partners. This entails the expertise of a CDF Forester to perform the CEQA analysis for the project.

TCU lost its VMP Forester position in 2002 and that work now must be done by existing Unit foresters whose workloads are already overwhelming. The list below contains these institutional and other issues that have made implementation of the TCU Fire Plan, projects, grants and contracts more difficult.

- The delay in announcing grants that were awarded through the National Fire Plan reduced the time frame to actually implement the grant projects.
    - This has frustrated both the Battalion Chief and cooperator sponsors of these projects.
    - A more timely process must be developed to streamline grant award notification.
- CDF fire crews have been very involved in the implementation of fire plan projects. There are just not enough crews to support the work load generated by the fire plan. CDF managers in Sacramento must continue to support the Camp Program and fight any efforts to close camps or cut crews. If anything, they should fight for expanding the Camp Program to add camps and crews to the CDF arsenal.
- The National Fire Plan grants do not allow funding of maintenance projects that will treat fuels that have grown back in existing fuel breaks and treated areas.
    - The only way that most of these maintenance measures will take place is through the use of grant dollars.
    - CDF needs to communicate this fact to the federal agencies that sponsor the grants, otherwise maintenance of past treatment efforts will never occur.
- Prescribed burns have become more difficult to execute for the following reasons:
    - Implementation of more stringent air pollution rules – "Burn Days" occur less frequently than before.
    - More difficult to schedule equipment and personnel resources during fire season. Many burns were postponed or cancelled altogether because resources were committed to incidents or cover assignments.
    - Rain in early October has caused burns to be cancelled.
    - Due to lawsuits being filed against government officials following recent prescribed burn escapes that have caused property damage, many CDF officers are not willing to assume that liability.
- Loss of VMP Forester I position in 2002 fiscal year has delayed processing VMP agreements for pre-fire projects.
- VMP Programmatic Environmental Impact Report for performing VMP's in coniferous forests needs to be approved to avoid the current requirement of filing "Negative Declarations" for these VMP projects.
- Need to integrate both NEPA and CEQA into a single checklist to prevent the necessity of duplicating these efforts on projects with federal partners.
- Delay in processing the new Five Party Agreement has delayed projects that involved federal partners.
- There is usually not enough Unit staff available to identify, plan and implement Pre-Fire projects during the non-fire season due to Amador Plan and equipment maintenance commitments. There is a need to develop a fully staffed fuels

management program in CDF. It is unrealistic to expect suppression staff to design, plan, and implement fuels treatment projects utilizing the current grant funding cycles and requirements.

- Weather has affected project implementation in the following ways:
  - Snow at higher elevation projects has kept crews from working during the winter months. This has been an issue on 2 grant projects.
  - As mentioned above in #2, rain has caused delays or cancellation of prescribed burns.
- The time frames for completing the annual pre-fire management plan are not realistic, especially when considering that the date the fire plan analysis data is made available to CDF pre-fire staff is usually late April or May. Due to errors in the original 2005 data that was available May 11th, the final corrected data was not available until after May 31st. If our fire plans are going to continue to be due June 1st of each year, realistically the data would need to be available in late March in order to hold public meetings and get all the required signatures by June 1st.
- CDF staffing, in general, is insufficient to provide adequate personnel to plan and implement pre-fire projects. This is especially true when county contracts and Amador Plan programs use Schedule B personnel to augment their programs.
- The retirement of the Fire Prevention Assistant II (also the Unit VIP Coordinator) in TCU in December 2004 has affected the Unit's VIP program. The position has not been filled.

UNIT-WIDE BLM PROJECTS

2005 and Beyond Activities

This section of the plan was received too late to be incorporated into the body of the plan. In the next printing, the BLM projects may be incorporated into the CDF Battalion Plans where the projects will occur. These projects are listed in approximate order of planned accomplishment. None of these projects are funded for 2006 through the BLM but will be requested for funding beginning in 2007.

- Hetch Hetchy/Anker # 2 VMP – This project is a prescribed burn on HHWP, BLM, and private land in the Moccasin area. The northern end of this project is the Hetch Hetchy/Anker #1 VMP, and the southern end is the Creek Fire. Reducing these fuels will give fire fighters a chance to contain the fire before it gets into the Priest Reservoir basin. Priest Reservoir provides drinking water to millions of people in the Bay Area. Status: Project is being reviewed in Region Office; plan to begin prep work in winter/spring 2005.
- Cattle Drive Trail Fuel Break and Fuel Reduction Program – This project is being planned in three phases and will extend from Yankee Hill Road to Parrott's Ferry Road. The fuel break is located along Cattle Drive Trail for the first phase and then follows the main ridgeline west to Blue Mountain Minerals. From Blue

Mountain Minerals, the project follows Marble Quarry Road back to Parrott's Ferry Road near the Gold Springs Subdivision. The first public meeting was held in January 2005. Interest letters have been sent to affected landowners. If all of the landowners wish to be involved in the project, it will encompass over 130 acres. It is anticipated that work will begin in 2005 and continue into the future until the project is completed. Funding ($29,900) for the first phase of this project was secured through the CDF Proposition 40 Program.

- Pine Peak Fuel Break – This project is in Calaveras County off of Lombardi Ranch Road and Highway 49. The BLM parcel is on a hill top, has limited access and is surrounded by homes. The fuel break would run along the ridge line from a cul-de-sac on the east side to the private land on the west side. The treatment would entail some hand cutting of brush, particularly on the east end that could be chipped in place. The slopes are too steep to treat with a machine in most areas. A good portion of the hill top is already light grassy fuels and will not need further treatment. Total treatment area will be approximately 10 acres. The BLM has already had contact with the local homeowners association in this area and had made tentative plans for a limited access trail along the fuel break.
- Happy Valley WUI – This project will treat the fuels on a BLM parcel by homes along Highway 26 and Buckeye Road near Mokelumne Hill in Calaveras County. Treatment would consist of mastication with machinery and will cover approximately 25 acres. The BLM has had contact with some of the homeowners in this area and they are supportive.
- Fairway Acres – This BLM parcel is designated as an Area of Critical Environmental Concern due to rare plants and is surrounded by homes in Jamestown and Sonora. The parcel lies just west of Highway 49 where it junctions with Highway 108. Due to the sensitive species in this area, the BLM proposes to treat just the perimeter of the parcel for a total of approximately 25 acres of treatment by masticator. This project needs further coordination with the local homeowners to gain support and access to the property.
- Rail Road Flat WUI – This project is designed to protect the homes in and around Rail Road Flat and the Independence Road area in Calaveras County by treating the perimeter of the public lands. Treatment would cover approximately 50 acres and be accomplished with mastication mowers.
- Buchanan Road – This project is in Tuolumne County near Tuolumne City and is approximately 25 acres of mastication designed to protect the surrounding homes near the BLM land. The local fire safe council is very supportive of this project.
- Darby Knob Fuel Break – There is an existing fuel break in this area that is in need of maintenance and can be treated with a masticator. The treatment area is approximately 20 acres in Calaveras County near Forest Meadows.
- Jackass Hill – This project, in Tuolumne County, is to masticate approximately 60 acres near Tuttletown to protect homes in the area.
- Priest Grade – This project is to treat approximately 20 acres near Groveland and Moccasin in Tuolumne County to protect those communities.